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Vol. CLXX No. 2218 WITH WHICH IS INCORPORATED THE GRAPHIC JULY 25 1942

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Volume CLXX No. 2218 The SPHERE, London, July 25, 1942

THE SPHERE
With which is incorporated "THE GRAPHIC"
The Empire's Illustrated Weekly

THE COMMANDER-IN-CHIEF ON THE FIELD OF BATTLE AT EL ALAMEIN: GENERAL SIR CLAUDE AUCHINLECK CONFERRING WITH A CAPTAIN OF THE 50TH DIVISION IN THE DESERT, WHILST PREPARATIONS WERE BEING MADE BY THE 8TH ARMY TO RESIST THE ENEMY'S ADVANCE

After the fall of Tobruk the C.-in-C., Middle East, took over the command of the 8th Army in the field and himself devised the plans for the checking of the enemy at the El Alamein line. Since assuming command, General Auchinleck has been constantly at the battlefront, although Cairo is still the official Headquarters in Egypt. Under his direction the 8th Army at first arrested Rommel's headlong advance to the Nile Delta and then began to hit back at the Axis forces whilst awaiting the arrival of sorely-needed reinforcements. Sir Claude is fifty-eight years of age : most of his service has been in India, although in the last war he also served in Egypt, at Aden and in Mesopotamia. In 1941 he was Commander-in-Chief in India, exchanging that high post with General Wavell after the latter's campaign in Libya. The 50th Division (to an officer of which the C.-in-C. is speaking in the above picture) distinguished itself greatly at Gazala by covering the retreat of the South African Division from that position

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A WAR NEWSLETTER—No. 151

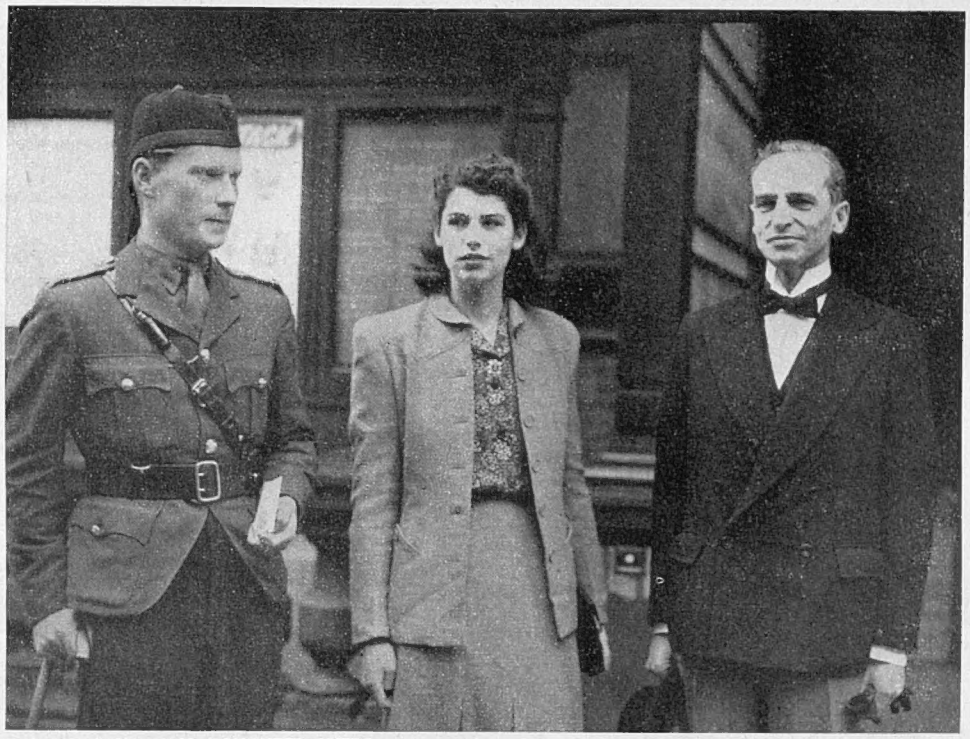
1, NEW OXFORD STREET, W.C.1.

Russia—This Year, Last Year, Next Year?—A first hint of autumn in the air turned me to search among the old files. On this day last year I wrote in the "Newsletter" these words: "Russia means business.—In a battle waged without pause on a thousand-mile front and 200 miles deep, the Chief Accountant of the Bank of England could not be relied on for accurate figures of casualties in men and machines inflicted and received. But two weeks of the great Eastern Front battle give us assurance that Russia means business, that the Germans have already denuded other fronts and called in a mass of reserves in men, machines and petrol to replace enormous wastage and casualties, and have far less to show for this wastage than the least optimistic of Hitler's advisers anticipated. Clearly Russia is inspired by a hatred of Nazism which is not going to peter out, and for months to come we may expect that the best of Hitler's vast army will be fully occupied on Russian soil. A month ago we had no inkling that a situation so beneficial to our cause could come about even by a miracle. Russia means business. Do we? The Russians are relying on our help; they constantly stress our loyalty as allies; they speak of their sacrifices as cheerfully given to avenge the bombing of London. It is significant, and we must not fail them; we must help them in *all* ways; with advice, with material, with air diversions, naval diversions and *land* diversions. And so must the enslaved nations, now denuded of their Nazi guards. *Now* is the time. If we let it go by, we miss the opportunity for which we claimed six months ago we were training our armies, for *attack*." Almost all this year-old article might pass muster as a commentary written for to-day. The vital truths remain precisely as they stood a year ago. Russia means business now as then. Russia is taking the chief strain. Russia urgently needs all the help we can give in material and by way of diversion. And once more Hitler is "behind schedule"—by six vital weeks at least. If there be a nip of autumn in the air again, be sure Hitler feels it.

Gandhi.—Gandhi has long been treated by people in Britain with a restraint and respect which at one time he perhaps deserved for the integrity and austerity of his life and for a singleness of purpose which won for him great influence in the Congress Party. That influence remains in India. In Britain, if the restraint and respect continue to be observed, they are no longer based on Gandhi's personal qualities. In India's deadly peril, he is now employing the strategy of party politics, and there is no more sense in that than there is in a lunatic sawing off the branch on which he sits above a chasm. No gains can be held in party political warfare if India lie under the heel of a ruthless conqueror, equally detestable to all parties. The saint is become the visionary, drunk with words and fuddled with phrases, and more than suspect here and also in India of preferring the cause of personal prestige to the larger cause of country. The average Englishman, little as he may comprehend the complex issues and differences which divide India, can at least see clearly enough the dangerous futility of Gandhi's present mood and may wonder how much longer this restraint and respect will be deemed a measure of political wisdom. This view must now be shared by important and virile sections of Indian opinion, where virility of mind goes with virility of reasoning, as everywhere else. A paper saint, rattling a cardboard sword, has India at his mercy and the fate of hundreds of millions of people hangs on the wordy formulæ of a visionary no longer remotely sane but still dangerous as long as his shattered reputation for integrity is bolstered up and his influence foolishly fed by flattery.

Sweden, Russia and Britain.—I am one of Bishop Bell's flock, perhaps one of his black sheep. On his return from Sweden, he published for his flock his impressions of that neutral country. In some particulars his observations were a douche of cold water on the heads of wishful thinkers and a call to realism. The Bishop found that the Swedes, although they have been revolted and jolted by the Nazi brutalities in Norway, still regard Russia as Enemy No. 1 of the Baltic States and, *ergo*, of civilisation. They realise that the military alliance between Russia and Britain is a vital necessity in the Allied cause, but "they could never understand how Lord Lang, as Primate, could have called British people to pray for the Soviet Forces." In the matter of atrocities and of menace to civilisation, the Swedes still give pride of place to Russia. The Bishop considers that this bald fact should be carefully remembered and weighed by those in Britain who to-day see the whole world arrayed, in spirit at least, against the devil-hordes of the Axis. Myself, I accept the Bishop's observations as a completely honest effort to get at the whole truth (always difficult during a short conducted tour), and I am confirmed in my belief that Mr. Churchill's original declaration, when we embraced a common cause with Russia, was the right and the dignified attitude—namely, to treat Russia as our "brother at arms," to help her, trust her, co-operate with her, without reserve, to the last ounce of our resources; but neither to make ourselves ridiculous, nor the Russians cynical, by a sudden, bald-headed, political *volte-face* and an ingenuous worship and admiration of everything which the Soviet Union has done in the past, and still recent, years. It was a Russian who said: "We are none of us saints." The Russians are realists to-day, at any rate, and I do not think they would have trusted us less or appreciated less the value of our help and the worth of our national character if we had adhered to the Premier's original and sensible policy when that great, grand and vital alliance of expediency changed the face of the war against Nazism. If we had done so, we should have lost nothing of the impetus of our co-operation with Russia; and we should have lost nothing of such reputation as we possess in Europe for logic, sincerity, dignity, realism and common sense.

The Functions of Prelates.—The Bench of Bishops, after a recent shuffle, is very active and prominent in its pronouncements on post-war problems. This activity brings me alternate comfort and despair. I am comforted by the thought that the Great Ones, in this critical hour, must possess information of a very cheerful kind, denied to me, if they can waste time settling our peace policy, when the War is yet to be won, and looks no nearer winning than in 1941. But, on the whole, their utterances on the problems of peace more often fill me with despair. The nursery saw which stresses the folly of counting unhatched chickens never shrieked more loudly. There are things—urgent things—to be done at home if this war is not to be lost, and the leaders of the Church should have their hands full enough with urgent problems at their Palace gates. In their hands, I grant, is the key to winning the Peace. Only a return by Civilisation to the Christian ideal of brotherhood and service can win permanent peace. But the key to winning the War is in many hands beside theirs, and, while the War lasts, the Bishops are but one of a group of labourers in the vineyard, with their special job to do and not much time left over for talk and discussions on matters not instantly relevant. Myself I doubt whether now or after the armistice the question of the future of the Rühr and the German war-industry areas is primarily one for a Churchman, even the most exalted. There is another nursery saw anent the cobbler and his last. We learned by bitter experience the truth of the saying: "If you want Peace, prepare for War." The time is not yet past for practising this lesson. I am sure enough, that, sound and wise as many of these episcopal utterances and theories are, their effect on a public, quite ready for any invitation to complacency, is dangerous.



THE AIR MINISTER'S DAUGHTER WEDS: Last week at Caxton Hall Miss Elizabeth Sinclair, younger daughter of Sir Archibald Sinclair, Minister for Air, was married to Captain A. Lyle, of the Black Watch, younger son of Sir Archibald and Lady Lyle of Glendelvine, Perthshire. Later in the day the Scottish form of marriage ceremony took place for the first time in the Crypt of the House of Commons. The minister officiating at this later ceremony was the Rev. Joseph Moffat, Minister of Crown Court, Church of Scotland, Covent Garden, where Sir Archibald Sinclair is an Elder. Above are seen the bridegroom, the bride, and Sir Archibald Sinclair

The London Library.—Lord Ilchester the other day occupied the chair, which many illustrious literary men have filled, at the 101st annual general meeting of the London Library. It is an annual meeting which deserves a note. This coming winter is likely to reveal, as few winters in our time, the outstanding comfort and resource of this national reserve. We are back once more to the restrictions in terms of space which limited the bodily activities of our ancestors. They did not suffer those restrictions to limit the range of their minds. They formed libraries and used them. They travelled in the realms of books. They practised conversation and adorned it with their gleanings from the library. We can't do better than imitate them. The Continents may be barred to us (the county next to our own is indeed barred to us), but the whole civilised world is *there* under lock and key, ready for our enjoyment, ordered for our profit, in St. James's Square. You only need a key, which is cheap at the price. A luxury cruise, a circular tour; *le pays du tendre, le pays de la sagesse*, the open road and the way to peace, sanity, salvation and understanding—for the price of four bottles of war whisky.

"Common Among Sailors."—I used to think that Ministers of Religion were outstanding for the trenchancy and rudeness of their comments on anything which journalists wrote with which they disagreed. But war experience compels me to transfer the palm to retired naval officers. This caveman "method of approach" is certainly becoming another "vice common among sailors." A recent reference to a famous remark made by Beatty at Jutland has to date brought me three such letters from three retired naval officers. With unexampled ferocity they all leapt upon me. They were all quite cocksure about the precise circumstances in which the remark was made. Each flatly contradicted me. Unfortunately, all flatly contradicted each other! Their cocksureness did not end there. Most of the space in their letters was taken up with chapter-and-verse proof that *they* had foreseen every chief event of the war; that the Authorities had foreseen nothing; and that "any nit-wit" could have prevented the bulk of our failures and defeats. Whether this vice of brutality and cocksureness is the result of retirement and unemployment in this time of Crisis, or whether it was the *cause* of that present unemployment, I do not know. But I have a shrewd idea.

The Portman Peerage.—The second Viscount Portman, born in 1829, had ten children, including six sons. The chances of the youngest son, or the heirs of his body, succeeding to the title must have seemed remote indeed right up to 1911, and beyond. The eldest son died without an heir in 1911. The second had died young. The third and fourth sons succeeded to the title, and now, by the death of a nephew, the fifth son has succeeded. It is also quite inevitable that one day the sixth son, or the male heirs of his body, must succeed. Oddly enough, wars had little to do with this chain of inheritance from brother to brother. It was a blotting out of a vigorous strain. The second Viscount's fifth son now succeeds, 113 years after the birth of his father. These are rare and curious facts and figures.

THE OLD STAGER

At many places on the road to the British forward positions at El Alamein there are double lines of traffic, as fresh supplies come up. "The effort to get everything up as quickly as possible has been terrific," states a report accompanying this picture. General Auchinleck has himself been inspecting the flow of fresh material to the front

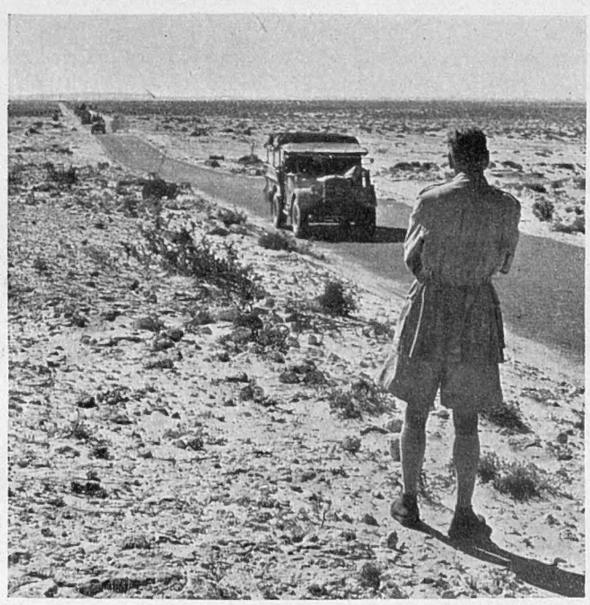
THE BATTLE OF EGYPT

First Official Photographs of the 8th Army on the Alamein Line, and of the Rush of Fresh Supplies to the Fighting Front

(See also pages 105-8 of this issue)

The Scots Guards in their protective trenches in new positions in the El Alamein area. Pictures of the Guards going into action, with the tanks, are reproduced on page 108 of this issue

The Guards hold the line: The trenches have been dug in the soft, stony soil of the desert at El Alamein, with a revetment composed of the fresh earth thrown outwards. At stated intervals along the line, machine-guns have been interposed into the line of rifles



General Auchinleck stops by the roadside during a tour of the forward positions at El Alamein to watch the long lines of troop convoys moving up to the front

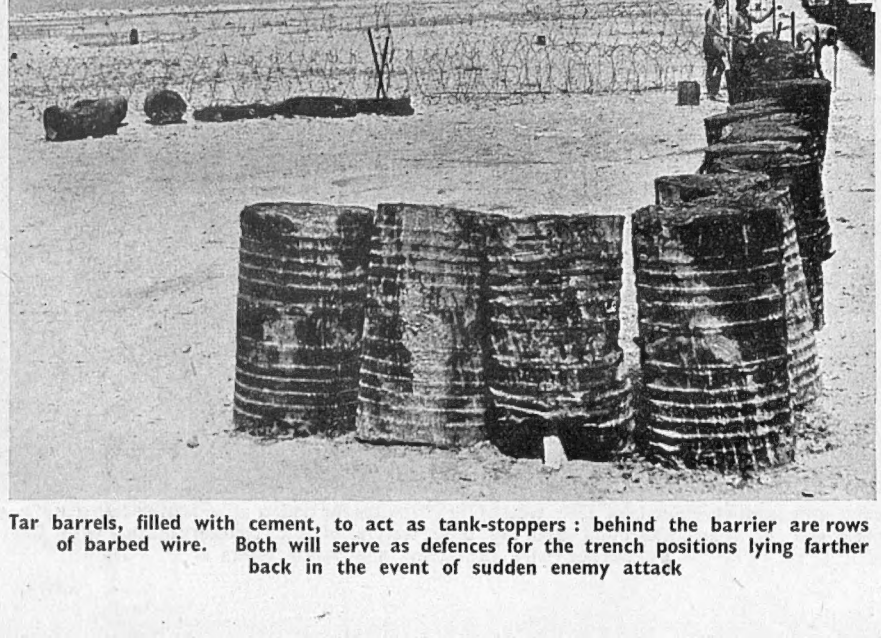
A machine-gun team checking over their weapon in readiness for action after having taken up a new position: In the background are the blue waters of the Mediterranean, with lines of barbed wire protecting the sandy beach

THE BATTLE OF EGYPT *(continued)*

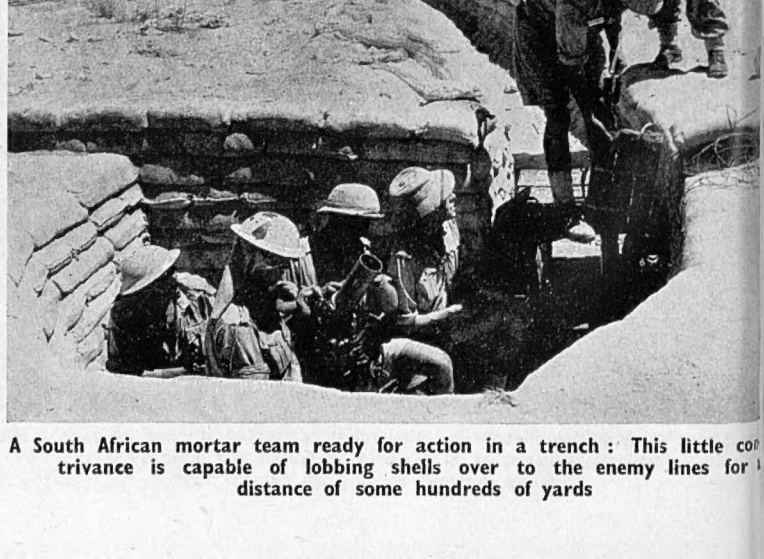
Heartening reinforcements of all kinds—men, tanks, guns, vehicles, etc., etc.—have been streaming up to the desert battle-front since General Rommel's headlong drive for Alexandria was halted at the Alamein line. This picture shows heavy-duty tank-carriers on their way up to the front: each lorry carries one tank on its back and tows another behind on a specially-built trailer

South African Sappers preparing holes to take the Mark V. mines: These are distributed from a central stack and Sappers dig big shallow holes alongside them. Armourers then fuse the mines and place them in position: finally they are covered with sand

A cruiser tank being off-loaded from its carrier after arrival at the front. The tanks are conveyed in this fashion as otherwise their vulnerable tracks would be affected even before they went into action



Tar barrels, filled with cement, to act as tank-stoppers: behind the barrier are rows of barbed wire. Both will serve as defences for the trench positions lying farther back in the event of sudden enemy attack

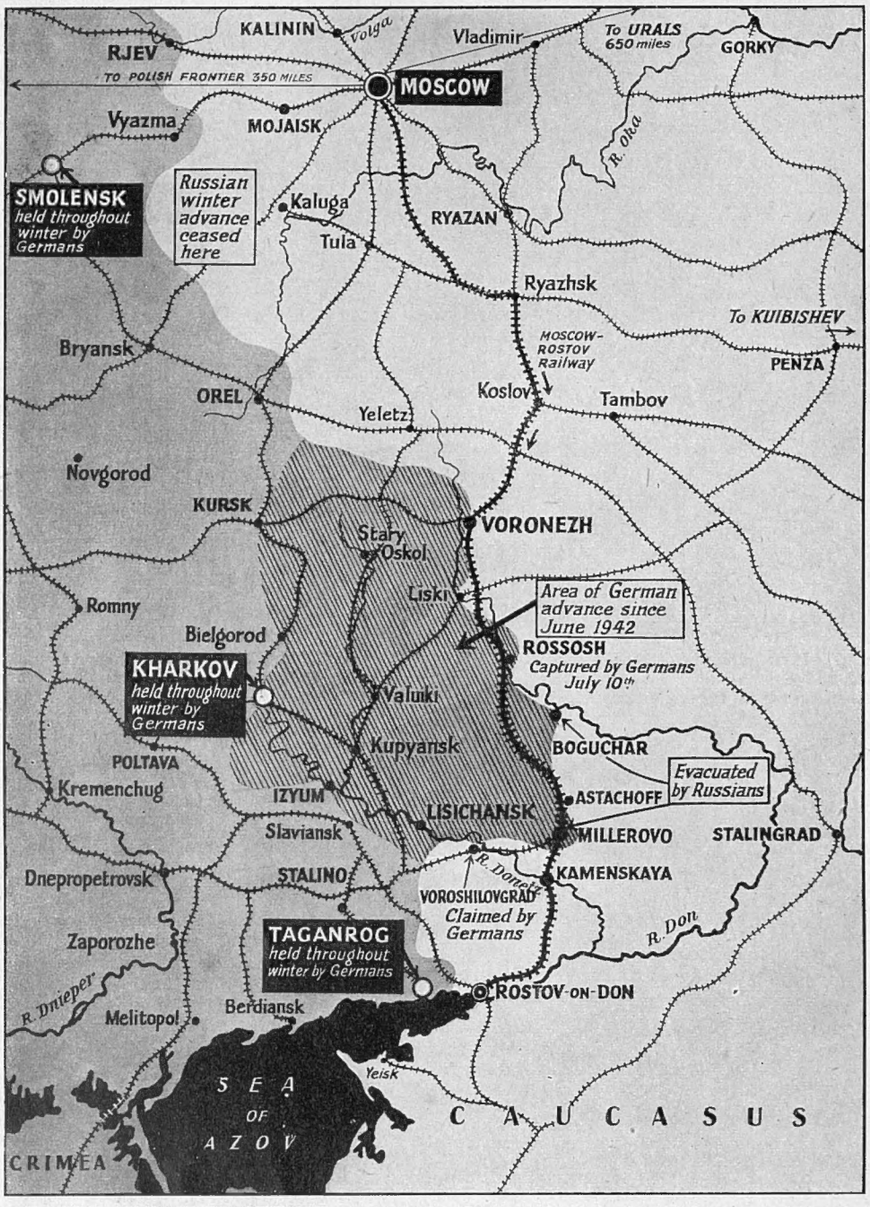


A South African mortar team ready for action in a trench: This little contrivance is capable of lobbing shells over to the enemy lines for a distance of some hundreds of yards

New "Crusader" tanks going forward to their positions at El Alamein. These tanks have been equipped with mortar guns for lobbing shrapnel and high explosives into the enemy's positions. The "Crusaders" are British-designed and British-built: they are faster than the "General Grants" and are considered to be very fine fighting vehicles, well suited to the conditions of desert warfare

The South Africans dig in in the El Alamein "Box": This is the Signal Section at work at Brigade Battle Headquarters—a number of rooms joined by passages dug into the hard salt ground. In the picture are: Signaller A. J. Robins, of Bethlehem, Free State, who is joining a line; L./Corp. S. Kangkisser, of Johannesburg, who is operating a Fullaphone; Corp. B. McAlister, of Springs, Johannesburg, who is receiving a wireless message; and Sergt. I. Firer, of Johannesburg

THE LATEST PICTURES FROM RUSSIA



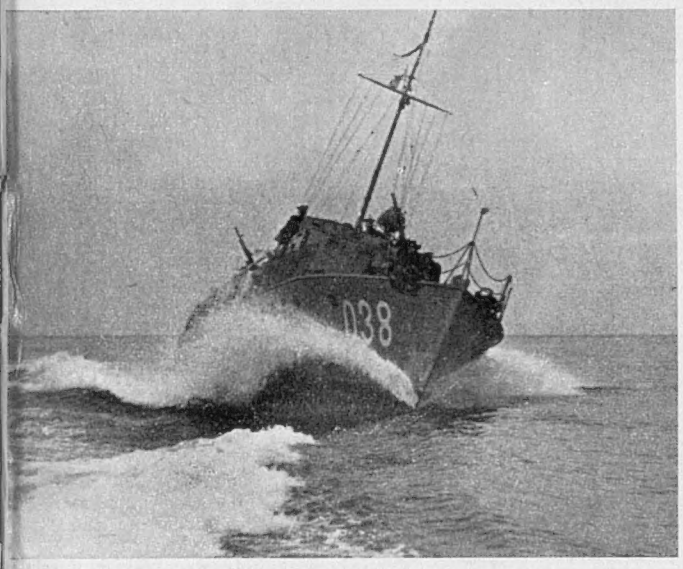
THE NEW 1942 NAZI OFFENSIVE against the Russian Armies of the Centre and South: The summer offensive of the Germans on the Russian front may be said to have begun on June 29, when an attack was launched in the neighbourhood of Kursk, some 120 miles to the north of Kharkov, one of the three vital points to which the Nazi commanders clung throughout the winter offensive of the Russians. The chief fighting and the most important advances of the Germans have been in the basins of the Donetz and the Don. The capture of Rossosh led to a crossing of the Don at Boguchar and at a point further south. At the beginning of the week, the Russians were endeavouring to break down these bridgeheads. More German advances were made at Millerovo and Lisichansk, however, and there was also violent fighting in the outskirts of Voroshilovgrad. Huge concentrations of tanks and dive-bombers, and in some areas flame-throwers, were employed. In one area, that of Voronezh, the Russians repulsed all the German attacks

THE GERMAN COMMANDER, Field-Marshal General von Bock (c centre) with General Lindemann, Commander of a Germa Infantry Division (on right) during the fighting in Russia

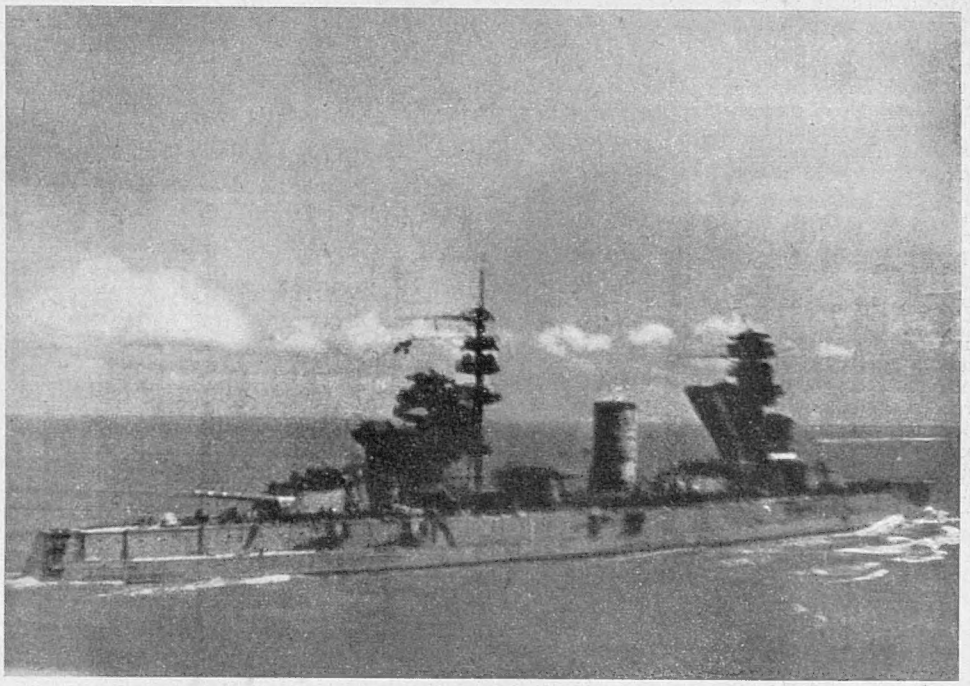
"DOWN WITH HITLER," a demand by German prisoners in Russia Many of these prisoners have been astonished to find themselves humane treated by the Russians. Broadcasting to Germany, a private soldier the 4th German Infantry Division said: "We were always told that be captured by the Soviet troops meant certain death. Not only do t Russians not shoot their prisoners, but they treat them extremely well Here three German prisoners in a Soviet camp are preparing a post which reads "Down with Hitler and his gang of murderers"

HEAVY RUSSIAN TANKS, OF A TYPE WHICH HAS DONE MUCH TO STEM THE GERMAN ADVANCE AT PLACES ALONG THE BATTLE-FRONT, heading towards the forwa lines. Note the size of the huge gun mounted in the main turret

RUSSIAN ARMY RESERVES PASSING THROUGH MOSCOW ON THEIR WAY TO THE FRONT. Many thousands of Soviet reserves—of which there are tremendous numbers—are now being sent up into the forward areas to stem the German advance eastwards and southwards



VEDETTE OF THE SOVIET FLEET manœuvring at high speed during an attack on an enemy submarine : The Black Sea Fleet played a great part in the epic defence of Sebastopol, shelling and blasting enemy coastal emplacements, landing parties of marines to harass the enemy rear and gaining valuable information from scouts shot through submarine torpedo-tubes on to the shore



THE SOVIET BATTLESHIP "PARIS COMMUNE," a powerful unit of the Russian Black Sea Fleet, at sea. During the siege of Sebastopol, this big vessel, standing out to sea, blasted the German shore positions with salvoes from her nine 14-in. guns. The *Paris Commune* is a battleship of 23,000 tons, with a complement of well over 1,000

RUSSIAN FLYING-BOATS OF THE BLACK SEA FLEET, on their way to bomb enemy shipping. Two bombs are actually seen falling in this picture

RIVER RECONNAISSANCE : A picture from the battle-front : Red Army scouts setting out to spy out the land and prepare the way for a counter-attack by their comrades

GOEBBELS SAYS "LET 'EM ALL COME!"

Informed of Our Plans for the Creation of a Second Front, the Enemy have so Fortified the Occupied Coast that it Now Bristles with all Sorts of Obstacles to Impede Our Landings and to Check Our Advance. Some of These Defensive Measures are Here Described

By FERDINAND TUOHY

NEARLY a year has elapsed since the first rumblings were heard in the land for a Second Front to help Russia. After Hitler divulged the narrow escape of his armies before Moscow, the demand became insistent and so it remains. Judging by the spoken and printed word, the Americans owe nothing to anybody in keenness to get on with the job.

As usual, we have turned the whole business inside out in full view of the enemy. This has become such a regular feature of Allied war-waging—on and off during eighteen months I have drawn attention to it—that one forbears to go into details. Each coastline has been examined from the standpoint of invasion (or *almost* every possibility); calculations have been made of the amount of shipping required for this and that plan, together with how the ships may best be used; the part air power would play has been exhaustively set forth by experts; no less so, the role of civil populations liable to become involved; what we should do with tanks and gliders; whether we should plan to hang on or just run in and wreck—politicians and "public men," commentators and not-so-amateur strategists have had their whack.

One does not doubt that it has all been necessary, this noisy bringing of a nation's mood to the notice of its rulers—in passing, one or two of these make as big *gaffes* as anybody. But the ballyhoo brought the Germans to the alert and has caused them to overhaul and tighten their defences to such a degree since last February that for every invader who might have become a casualty prior to that month, there will be several losses to deplore in operations to come.

Goebbels is doctoring home morale and reaching to foreign sympathisers when he dismisses the Second Front with a contemptuous "Let 'em all come!" But he may have more right to use that kind of language now than he would have had a few months ago. We have to weigh the military preparations the Germans have made in the interval to receive invaders, against our increased invading potentiality plus the additional hopes we have placed in local populations since the heartening, if infinitely tragic, sampling of St. Nazaire. ("They thought it was liberation.") German preparations to receive invaders would seem to fall under three main heads. Physical reorganisation of the ground. Picking and training of effectives for the defence-offensive. And closest control of the civil population. In all three spheres the enemy is going full speed ahead from North Cape to Bayonne, although naturally preparations are more advanced and thorough in some sectors than in others, in accordance with hostile reading of our likely moves.

When brave French youths reach the English shore, they sometimes report that their part of the coast, which they left, is held only by occasional German posts whose personnel is weary and to be had for the pouncing. Told in good faith, these reports are dangerous in so far as they egg on the more rabid of our Second Fronters; but fortunately we may rest assured that the Allied Intelligence branches are taking with much salt all stories of the softness and inadequate numbers of the Germans across the Channel. Any way you look at it, a terrible task confronts us.

Better that no specific parts of the French coast were mentioned, but in general it is well to assume that the Germans are as good at coast defence as we are and that they have the advantage in being able to evacuate entirely any prohibited area they choose—not just "a South Coast village," but scores of miles of coast many miles in depth. The Nazis are felling trees within 300 yards of the shore in order to reduce infiltration risk by night and to afford an uninterrupted sweep of fire at all times. The maze of defence works they are completing can be guessed, and Vichy reports them to be applying lessons learnt from the Russians before Moscow. The Germans' own pictures show their biggest coastal guns mounted on trucks and fired from a curved track, the recoil aiding to push the gun quickly back out of sight into its concealed lair.

The mine-field having come into its own for land purposes, this form of defence is being pressed forward with all haste, and also the construction of hidden forts—I suppose it would be more fashionable to call them "boxes" in embryo—capable of firing in all directions. Farther back, kindred "boxes" are being prepared to protect lucrative objectives such as airfields, underground U-boat "garages" and vital road and rail hubs. Right in the rear, the Maginot Line is being restored with its defences reversed. Large numbers of engineers and workers have been engaged for weeks turning its guns westwards and mounting new guns to take the place of pieces removed in the past two years for use elsewhere. But other defence lines intervene long before the Maginot.

The Speer (late Todt) Labour Corps is the principal agency of all this defence work. Units of it travel from place to place—thus, when the defences of the Lorient region were strengthened last autumn, 13,000 Todt men were billeted in the adjacent Quimperlé country, many of them Dutch and Flemings who couldn't talk French and were correspondingly safer in regard to possible leakage to the locals.

Turning to German effectives in France, reliable recent information mentions "between twenty and twenty-five divisions" which would indicate 400,000 to 450,000 men of all categories. Some of these divisions are known to be resting from Russia (some rest!). But the Germans are going in greatly for quality. The Matrosen Korps is believed to hold coastal sectors. A special new corps of anti-Commando units has been formed, whose members have been selected from the fittest men among the troops of occupation. Stiffened by experienced fighters from Russia, these units are equipped and trained for hardest hand-to-hand and street fighting. As the Germans are banking steeply on the glider in their conditional plans for the invasion of Britain—scarcely-to-be-imagined swarms of gliders landing whole units with the first streaks of dawn—they are taking due precaution now against us scoring glider successes on the Continent, and the tough, specialised man is being relied upon for the job.

But the chief thing to remember about German effectives in France is that reinforcements could be rushed through Belgium and Alsace. The Germans are banking on having sufficient experienced effectives to hold out until help comes. They are concentrating their armoured and motorised columns at nodal points whence these can be rushed forward to a menaced coastal area, or here and there inland, and they feel that the straight Napoleon roads will render this job much easier than it could ever be in tortuously-laned England.

Another thing we must be prepared to come up against is resistance by French units incorporated with the German Army. These are said already to exist apart from Laval's Tricolour Legion, the true purpose of which is to offer resistance in particular to the British, and to nip in the bud efforts by the French people to help their would-be liberators. It would be impossible to exaggerate the importance of having Americans along on any and every future operation in France, if only a sprinkling merged in each British attacking unit. The accent, the *brio*, the memory of "les Sammies" will work wonders with the French, not to mention the sight of a waving "Old Glory."

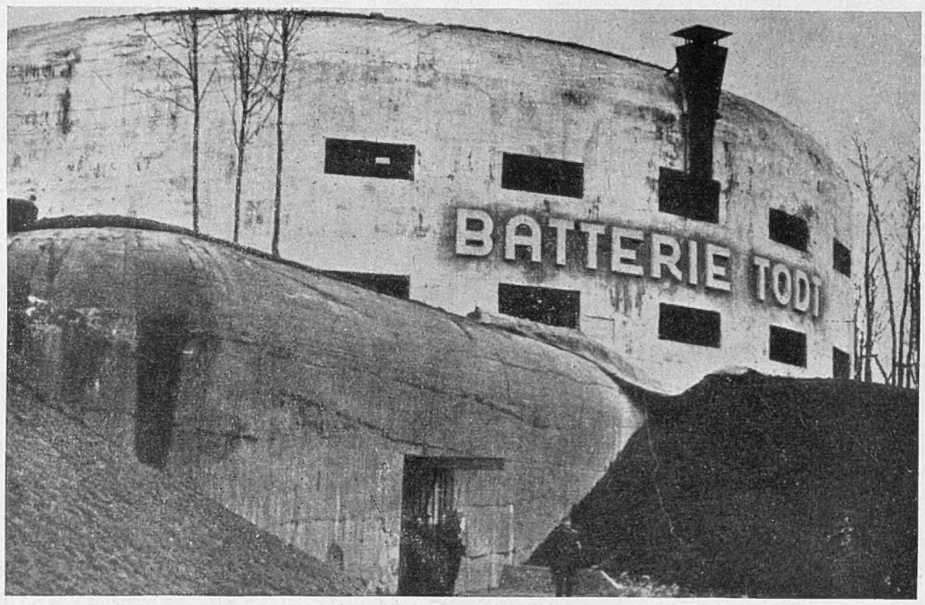
With regard to the transcending matter of joining forces with the civil population, the first thing to note is that we want the unfortunate inhabitants out and away from the coastal belt just as much, apparently, as do the Germans. Said the B.B.C. the other day to French people: "The presence of civilians in places where military operations are going on is a serious impediment to fighting units and particularly to the efforts of friendly armies. So move away as soon as possible from these prohibited areas as specified by the Germans. Don't wait until the last moment, when it may be too late. For the time being your part must be limited by consideration of your own safety. Do all you can to save your lives. The armies of liberation will need you and you will be informed in good time." To which I should be inclined to add: "But if you won't or can't leave the prohibited areas, then prepare cellars and dug-outs with food and water, where you can remain in comparative safety during the battling above, for days if need be."

The paramount business is to spare these civilians from becoming involved in terrible invasion events of precisely the same nature that we have always longed may be spared the people of Britain. Aside from this simple humanitarian aspect, consider the capital a Laval would make of a massacre of the innocents coupled with a subsequent Allied retreat from France or elsewhere!

Representative Snyder, Chairman of the War Department Appropriations Sub-Committee, says that the British and American armies will carry with them equipment for arming the population of the Occupied Countries for a mass rising such as the world has never seen. "Every U.S. soldier landing on the Continent should carry three guns—one for himself and two for fellows who want to join him," is another buoyant contribution from the same quarter. There are great possibilities here, but I cannot help thinking that the less *responsible* and *official* voices enlarge upon them, so very much the better at this delicate moment. For what else does it do but rouse the Germans to further emasculating action against the men they think most likely to clutch at Anglo-American weapons? Ex-officers are being interned right and left, and take the dreadful application at last of Polish and Czech extermination punishment to French families: men from eighteen to sixty to be shot, women to forced labour, children to supervised houses of education, if a member of the family is suspect of sabotage, attacks or "of causing trouble when believed to be in the pay of the British or Russians." The Germans are just finding excuses for selective arrests on a long-prepared plan duly kept back until its effect is most telling. Many a key man in the underground army across the Channel, who has been retained for specific tasks such as directing guerillas or major wrecking, will be caught up in the Nazi pre-invasion net.

The Nazi attitude towards civilians in an area of operations is foreshadowed by the following proclamation at Brest: "All civilians who disobey by remaining in the streets or porches or by showing themselves behind closed windows, will be shot on the spot by patrols. The use of the telephone, trams and railway will be forbidden. All traffic will stop. All shops, hotels, cafés, restaurants and schools will close." In other words, we may expect to encounter the most complete "Stay Out of Sight" in vogue among civilians, which is seemingly what we wish too—until zero hour for civilians.

The making known of zero time to civilians requires that invading forces shall bring along with them the means of communicating it. "Voice Vans" might do the trick: a carry-on from the propaganda wagons used so skilfully by Goebbels as Hitler overran land after land. Goebbels' publicity vans parked in each conquered market-place and proceeded violently to "contact" the inhabitants by means of loudspeaker, radio, proclamation poster and pamphlet. There is surely a lesson for invaders having to give immediate guidance to local populations.



A NAZI STRONGHOLD ON THE CHANNEL COAST—the "Batterie Todt": This is part of the enemy's defence system on the French coast. It is described as "one of the heaviest-calibre long-distance batteries on the Channel," and it has been built of steel and concrete, with strengthened walls as a protection against air attack. The Battery is named after Fritz Todt, the creator of the Siegfried Line and the builder of Hitler's military roads throughout Germany. Todt was killed in an air crash on the Eastern Front

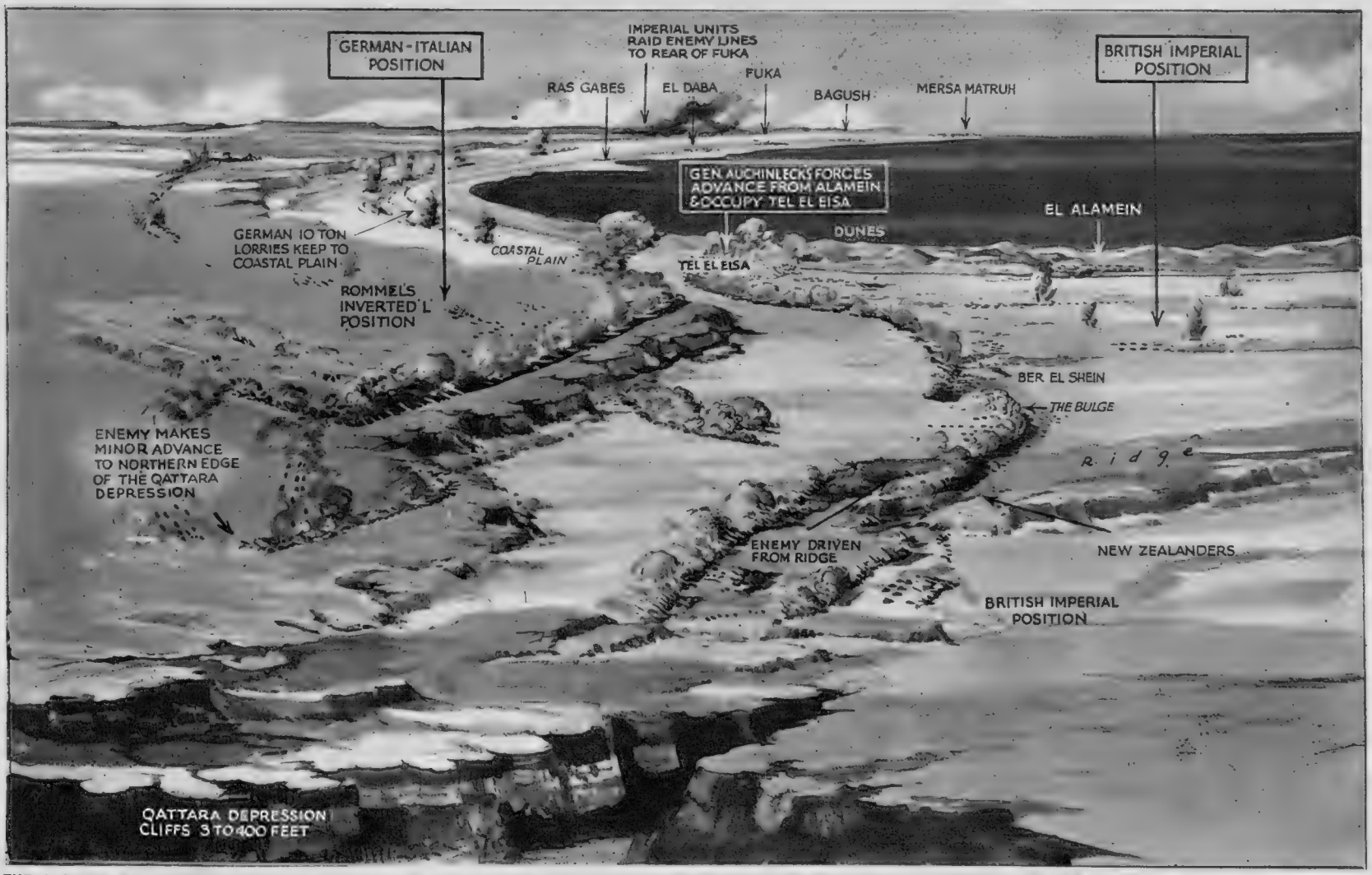
HOW ROMMEL WAS HELD FOR THE CRITICAL 48 HOURS PERIOD AT EL ALAMEIN: The main action in the defence of Alexandria was fought by a force of South Africans, who took the first shock of the German attack in an area running from the sea coast down to the Desert—*Drawing by E. Byatt*

The picture published above records one of the great turning points in the Libyan campaign, when in the last days of June a single South African Infantry Division (supported by a few South African Air Force Squadrons) held Rommel's army for forty-eight critical hours and thus staved off the great onrush of the Panzer Divisions towards the Nile Delta. General Dan Pienaar decided that the Division should hold the broadest possible front between El Alamein and the Qattara Depression, and not be confined in the El Alamein box, which might, indeed, prove a fatal trap. Platoons were called upon to hold sectors normally covered by a whole battalion; and, although support was later forthcoming from fresh troops called at short notice from reserve positions, for a time the 1st S.A. Division faced the enemy practically alone. There were three brigades of two battalions each, very much reduced in strength, while their artillery had also been considerably weakened. They set to work to improve the El Alamein defences dug last year by the 2nd S.A. Division. "When General Pienaar made his decision we were flung out in battle groups," said one officer. "My brigade held on till the night of July 2-3. During the day the enemy gave us hell. They were preparing for the 90th Light Division to get through. Some infantry came forward towards us from the north-west. But they fell back under our fire. About twenty tanks approached from the south-west and got within 2,000 yards, but these, too, we flung back. We hung on till nightfall, when we received an order to withdraw 3,000 yards. We packed up our vehicles with the enemy's most advanced elements only about 500 to 700 yards away."

The BATTLEFIELD of ALAMEIN

Where the Axis Forces, Invading Egypt, were Held by the British Eighth Army

—*Special* Sphere *drawings and diagrams*



THE ALAMEIN BATTLEFIELD, from the coastal plain down to the Qattara Depression. From the "Inverted L" position held by Rommel, he thrust out repeatedly to the south-east: eventually advances were made to the edge of the Depression and enemy posts were established there—*Drawing by E. G. Lambert*

b

The BATTLEFIELD of ALAMEIN *(continued)*

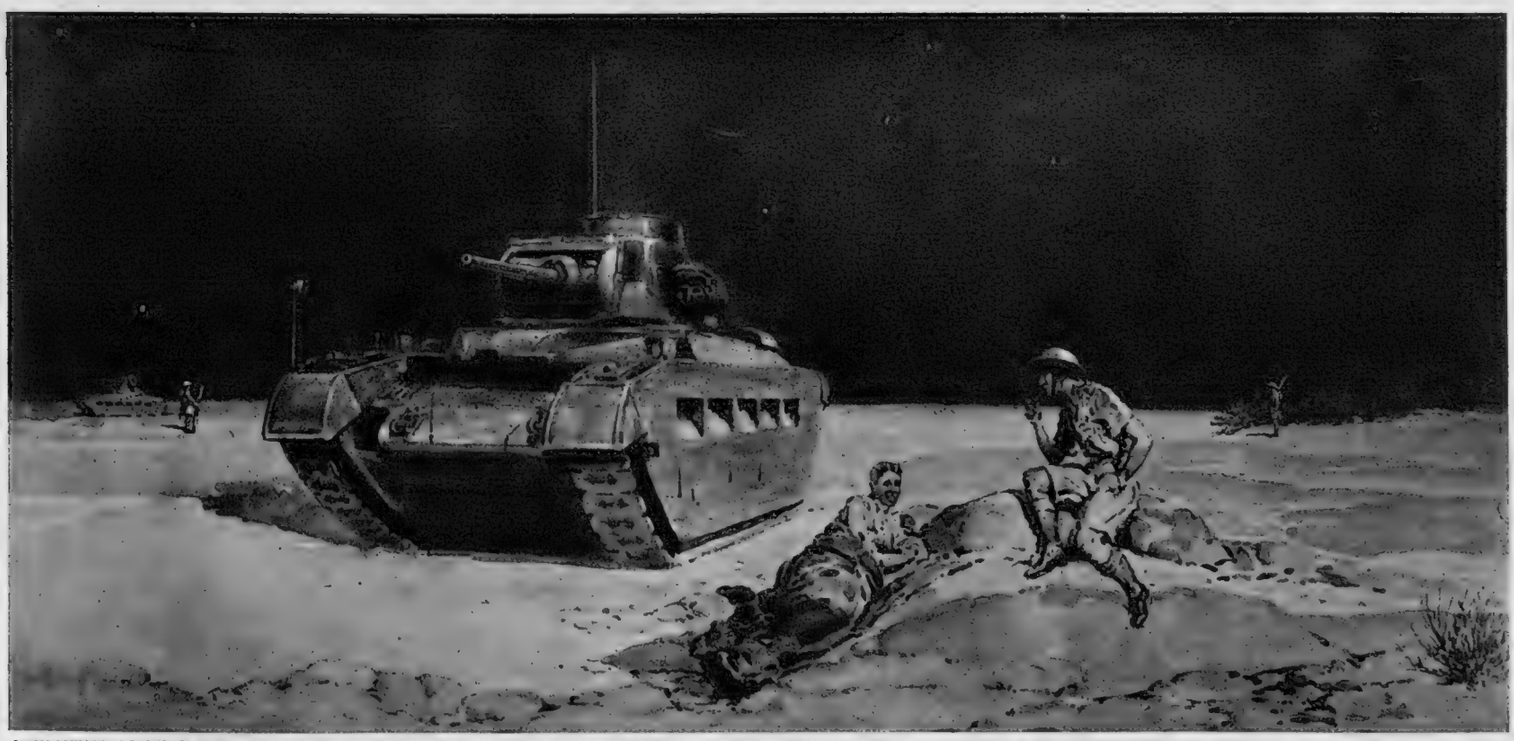
MIRAGE IN THE DESERT FIGHTING AREA: It has been reported that the weather in the Alamein area is tricky for fighting, with a temperature ranging from 112 degrees to 120. The desert country in which both sides are now operating is, in fact, proving in some ways worse than Libya. Heavy early morning mists are being followed by day-long mirages, when vehicles look as though they are floating in the air and men seem ten feet tall! At other times everything disappears in a vast sham lake. Not until evening, which ends with sundown, can the forces see each other clearly, even at 2,000 yards—*Drawing by E. Byatt*

HIT OR MISS ON THE EGYPTIAN DESERT PLAINS: The localised nature of the explosion when bombs from the air hit the desert surface permits of many escapes from injury, despite the noise and the concussion caused by the dive-bombers—*Drawing by E. G. Lambert*

When the enemy comes shrieking down, making as much noise as he can in the process, all seems lost for the moment. Crash go the bombs, up flies a mighty column of gas, smoke, sand and chips of rock. But, when the racket is all over, the lorry is very often still there—maybe shattered here and there, but still whole: but all about are small conical craters—smaller than the noise seemed to call for! If one can get down quickly enough it 's more than likely that he 'll survive. If one is a split second too late . . . here is an account of what happens: "I lay down—but not quickly enough. Bits of bomb splinter got me in both legs. I have lost two inches of bone from one, and the heel has gone in the other, but the doctor says I 'll keep both my legs." Quite obviously, therefore, the bombs dropped by Stukas are different from those dropped by Heinkels during the blitz on Britain! Even when a whole column of transport vehicles presents a good target for the bombers it is not unlikely that only a very few vehicles will be at all damaged

"IN-FIGHTING" BY THE R.A.F. OVER THE BATTLEFIELD OF EL ALAMEIN: Bombers strafing an enemy transport park, where the vehicles are laagered for the night. For this task, the aircraft use flares to illuminate their target—*Drawing by Roland Davies*

Co-operation between the Royal Air Force and the 8th Army has been closer than ever before during the present operations barring the road into Egypt. All transport movements of the enemy have been attacked, with the result that, in the opening days of the Alamein fighting, over 1,000 Axis lorries were destroyed from the air. A certain number of tanks—notoriously difficult to hit by aircraft—were also put out of action. On one occasion a big concentration of vehicles in a transport park was discovered and attacked by night, the target being lit up by flares. In the daytime, the roads and tracks leading down to the enemy's frontal positions have been vigorously attacked, and everything moving has been either bombed from the air or bombarded from the land. Enemy lorries have been seen to turn off the narrow tarmac ribbon on to the desert and the crews have been seen to scramble off, to the comparative safety of the level ground. The Army's enthusiasm for this timely aid rose with each day's air activity, culminating when the R.A.F. bombed enemy positions only 400 yards ahead of our own, with never a bomb falling even by accident within the British lines!



A NIGHTLY SCENE IN THE DESERT, WHERE THE TANK CREWS SLEEP ALONGSIDE THEIR VEHICLES: The nights are cool with a heavy dew, in strong contrast to the sweltering heat of the day. The crews roll themselves in a "flea bag" alongside their tanks or trucks, and by morning their covering is as wet as if a shower had fallen—*Drawing by W. G. Whitaker*

THE BATTLEFIELD OF ALAMEIN—*(cont.)*

INTO BATTLE: THE SCOTS GUARDS GO INTO ACTION AT EL ALAMEIN: Two of the most dramatic pictures of the present fighting by the 8th Army in Egypt

The two pictures reproduced here are from official photographs just released by the War Office: they are amongst the most dramatic yet published in connection with the desert fighting. Both show the Scots Guards going into action at El Alamein during the critical days when Rommel's forces were held at the very approaches to Alexandria. The Guards moved forward under cover of a smoke-screen and protected by heavy tanks which went in advance. In addition to the smoke-screen, there was another, made by the terrific clouds of dust sent up by the fighting vehicles and by the hundreds of marching feet. Tommy-guns were interspersed amongst the Service rifles, bayonets were fixed and the heavy guns of the tanks were all pointing forward. Note, in these two pictures, the sandy, stony nature of the ground, the battle equipment of the Guards and the long wireless antennæ of the tanks

THE INVASION ROAD TO JAPAN

—By Way of the North Pacific

The Significance of the Recent Japanese Attacks on the Aleutian Islands, which run out from the Alaskan Coast

THE Japanese invasion of two of the Aleutian Islands last month might prove to be a significant pointer to future strategic developments in the North Pacific, an area hitherto overlooked by many people as a possible major battlefield in the war against Japan. It is not generally realised, for instance, that American-owned Unalaska Island, containing Dutch Harbour, and the whole chain of the Aleutians below it, might be converted into a remarkable invasion road to the enemy's backdoor. But what are these Aleutians?

Very few people know. The islands are not particularly remote, but it just happens they are off the regular shipping routes, and have hitherto been able to present no startling attractions, either to tourists or to traders. Extending for nearly 1,000 miles round the so-called Great Circle of the North Pacific, so that you can pass from America to Asia along them without being impeded by more than a few hundred miles of sea, they cover a considerable land area in the aggregate, though no single island is larger than a small English county. Perhaps their principal drawback is the peculiar climate they have to endure, thanks to their position directly under Bering Strait, which admits cold water and winds to their northern shores as through a funnel.

If it were not for the warm Kuro Siwo current from Japan, which laps their southern coasts, the Aleutians would probably be frozen for the greater part of the year. As it is, they are chiefly subject to fogs caused by the mingling of cold and warm winds and water, making their locality dangerous for shipping. The danger is increased by the sometimes uncharted and often fantastic nature of the surrounding seas.

Thus, the ocean-floor falls abruptly at one nearby place to a depth of five miles; at another, it rises in an Everest peak of the ocean underworld to a few fathoms below the surface. A new island has been known to appear overnight, to sink a short time after, then to rise again. A submarine volcano continually froths the sea at another place. There are some islands to the north which are little more than floating volcanoes, for this is where the great fault in the earth's surface passes, directly down the islands to the fourteen burning peaks of icy Kamchatka, then through the smoking Kuriles, as if marking in fire the invasion road to equally volcanic Japan.

Fifteen to twenty large islands, and many small ones, comprise the Aleutian chain proper. They were discovered first by Russian navigators, who found a little near-Eskimo population known as Aleuts. To-day, Attu, that island first discovered, has a single frame-house village of only about forty native inhabitants, a queer mixed people now, with such hybrid names as Popoff, Aatacxans, Romanoff, Unimaks, Adreanofs. Russia owned the Aleutians till 1867, when she sold them, as part of Alaska, to the United States for 7,000,000 dollars; since when they have been developed chiefly as fishery stations, and minor bases for the U.S. Navy.

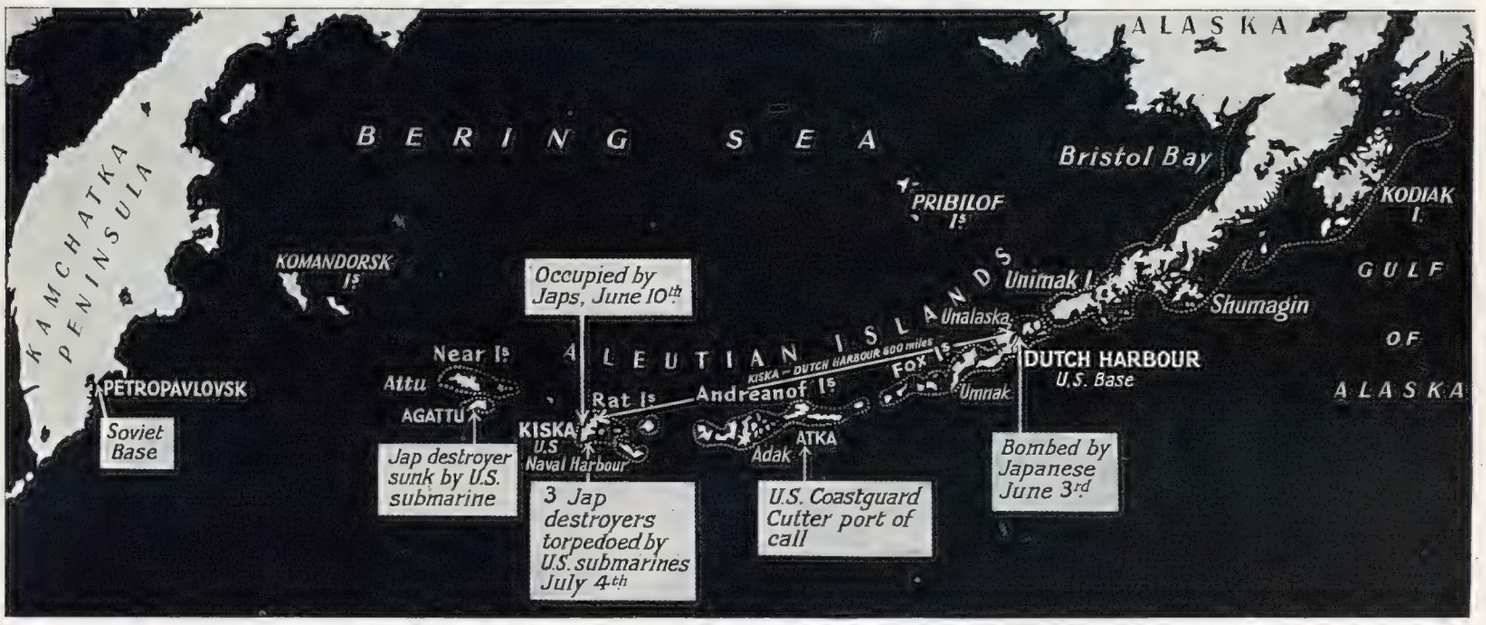
The islands leave America at that Unalaska, a pointed island, which is really a continuation of the Alaskan land-mass south-westwards. Next comes Unimak Island, without any importance, then the Islands of Four Mountains, likewise unused; and the chain continues with small groups to Atka, where the coastguard cutters called at a primitive haven. Adak is the next big island, completely undeveloped before the war, like the succeeding ones Kanaga, Tanaga, Semisopochnoi, Amchitka, and Rat. Afterwards, Kiska has some U.S. naval works; then there is a gap till Agattu and Attu—from which it is only 580 miles to Petropavlovsk, the large Soviet base in Kamchatka, that great peninsula which hangs like a sword above the head of Japan, in turn only 600 miles away.

Possibilities should be evident at once. The remarkable land-bridge of the Aleutians could convey a stream of retribution straight from the North American continent, main arsenal of the United Nations, to the very backdoor of Japan, forming perhaps the right arm of a tremendous pincers movement, of which the left arm would move upwards from Australia. Naturally, the Japanese must try to prevent this; and hence their first small invasion of the Islands. Much depends, of course, on the attitude of Russia. The Aleutians could not be used to the full extent without Russian co-operation.

The actual Japanese operations to date have comprised, as might be expected, carrier-borne air-raids on Dutch Harbour, combined with small landings on those two furthermost islands, Attu and Kiska. The Attu affair, as shown by the description of the place that has been given, is obviously little more than a precautionary measure on the part of the Japanese, for Washington reports since have confirmed that no works of any importance have been constructed on the island since the outbreak of war. Indeed, most of the little population, together with the only American inhabitants, were apparently preparing to leave when the invaders arrived.

But the Kiska landing was, and is, more important. The naval establishment there, however diminutive, was situated on a fine harbour, the best in all the Aleutian chain; and consequently the island could be transformed by the Japanese into a base for further operations north-eastwards. That is, if the Americans allow them to.

What has already been said about the islands was more than confirmed by the lack of information available from the scene during the Japanese landings, due to the prevailing fog, which impeded reconnaissance and attacks by U.S. aircraft. But as soon as the weather gave them a chance, our American Allies got to work. They were able to report after a week that they had located four Japanese destroyers in Kiska harbour or thereabouts, and had sunk three, damaging the fourth. Subsequently it was reported



THE CHAIN OF 150 ISLANDS WHICH COMPRISE THE ALEUTIAN, OR CATHERINE, ARCHIPELAGO: They form an arc jutting out from the Alaskan mainland towards the Kamchatka Peninsula, and cover a distance of 1,250 miles. Dutch Harbour, in the centre of the group, is the great U.S. Naval Base. At Kiska, to the west, is another Naval Harbour: it was occupied by the Japs on June 10. Other places attacked, with dates, are indicated in the map above

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THE U.S.-OWNED ISLAND WHICH THE JAPS HAVE NOW INVADED IN THE ALEUTIANS

Kiska Island lies to the west of the string of one hundred and fifty islands and islets comprising the Aleutian Archipelago: it was occupied by the Japs on June 10, probably because of the presence there of a naval harbour. The picture given here shows the nature of this territory: the shelter in the foreground is a dug-out called by the natives "Bar A'Abara": it is widely used, especially during the fox-trapping season. The natives of the islands are principally Aleuts, a branch of the Eskimo race

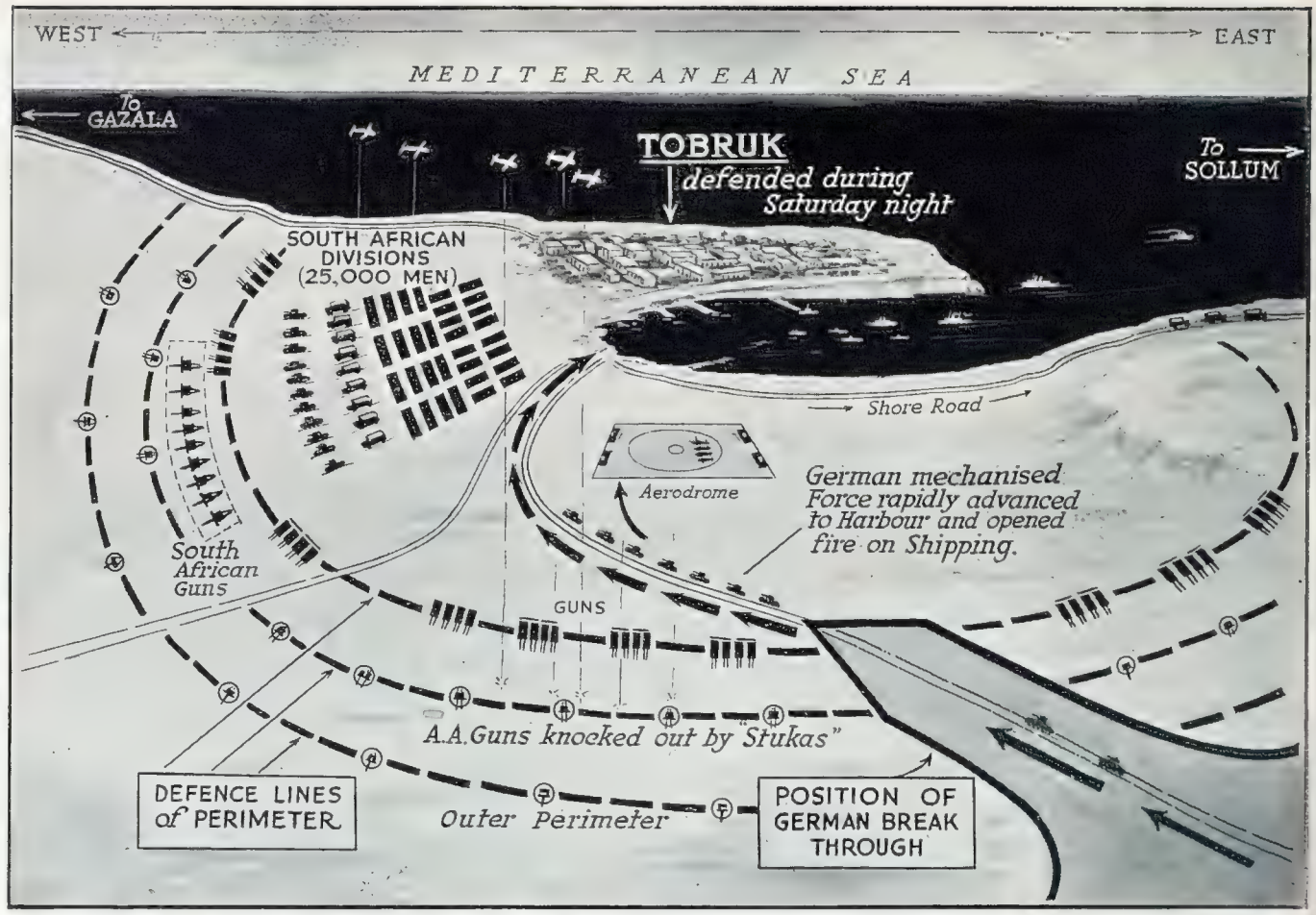
The BATTLES in the LIBYAN DESERT

An Analysis of the Events from May 26 up to June 13

By DONALD COWIE

(*Author of* The Campaigns of Wavell)

LT.-GENERAL N. M. RITCHIE, who was in command of the 8th Army during the Desert Battles



THE POSITION AT TOBRUK, showing how the 25,000 defenders were disposed around the perimeter. The German break-through, preceded by heavy dive-bombing attacks, was made from the south-east

IT is now possible to get a clearer idea of some of the reasons for our serious setbacks in Libya. The initial cause of these may have arisen from the one thing which uninformed critics and Government spokesmen alike have so far ignored—General Ritchie's original disposition of his Army along the Gazala-Bir Hacheim line! It is hardly to be thought that our Commander expected such a 40-mile desert front to stand indefinitely against panzers, unless protected properly by immense field-works. No doubt this line was intended merely to be the jumping-off ground for Ritchie's main attack.

It seems that he was planning to repeat the manœuvres of General Wilson and Sir Alan Cunningham in their earlier and successful campaigns against Rommel, and that he hoped once again to get in first. Our tanks were being drawn up for that purpose on May 26, infantry and stores behind them. But Rommel, as might have been expected, had no intention of being caught napping this time, and was able to strike first.

The enemy's intention to attack was known long before his leading tanks arrived. Desert Intelligence had, in fact, been reporting for some time that the enemy was on the move. But Ritchie, with the concurrence of Auchinleck, had decided (in Mr. Churchill's words) "to await the attack in our fortified positions and then deliver a counter-stroke in the greatest possible strength."

As a result of the battle which followed, Rommel was able to seize the initiative: the 8th Army fell back fighting at the centre of our line—that same line that had been constructed lightly across the desert as a jumping-off point only. During the week which followed, our armoured forces had to fight under the worst possible conditions—manœuvring backwards—to prevent the massed panzers from breaking clean through. It is likely that we lost a good number of tanks during this vital period.

It may be that one reason for this loss was that we may have used our tanks prematurely in rushing to meet the enemy columns. Ritchie and his lieutenants had their own difficulties to contend with in this style of warfare: in Russia, where conditions, of course, are different, the Soviet Commanders kept their armour in the rear till the attacking panzers had reached the limit of their first wind, and till they had been weakened by artillery fire. But such tactics can obviously only be applied in a battle of manœuvre where fixed defensive positions held by infantry are possible—not under conditions of desert warfare.

However, it was obvious that our losses must not be allowed to continue; on June 4 Ritchie assembled his damaged forces to deliver his counter-stroke. Tanks and armoured cars, British and Indian infantry, were deployed in the midst of what was itself a running battle, and flung against the series of strong posts the enemy had established round the "Cauldron," the gap that had been made by the panzers right through the centre of our original line. But just at that moment it happened that the Germans were also assembling what remained of their 15th Panzer Division, to make still another attack on us.

Thus the 8th Army ran into fresh trouble. They captured two points, but found the German defences strong, especially a nearly solid line of anti-tank guns. Our armoured vehicles went down one by one before their fire. It was thought for a moment that the sacrifice was going to be worth while, for the enemy armour was also dwindling. But, as night fell, the local German Commander, Nehring, called up his reserve 21st Panzer Division. It came through yet another gap that had been forced through our minefields.

A British armoured brigade gallantly counter-attacked the new panzer, but the remaining tanks at its disposal were chiefly the diminutive U.S. built Stewarts, and the heavy German machines were able to throw them off, aided by a thunder-storm which coincided with this attack. The British tank commander, Lieut.-General Willoughby Norrie, ordered all his remaining armour into the aptly-named "Cauldron," and a ding-dong scrap ended with the deceptive retirement of the Germans to their strong points.

In reality, the Battle of the Cauldron failed to win us the results we expected because—in the battle itself, and in the running engagements before it—we lost quite heavily in fighting vehicles. We have been told about the loss of all but 70 of our remaining 300 machines on June 13, over a week later. Those 300, however, might have represented only a part of our former large forces!

It has been declared that at the outset of the campaign, on May 26, we had roughly the same number of tanks as the enemy, if not slightly more. The combined German and Italian armies had nearly three whole panzer divisions, counting in some up-to-date Italian tanks. Now, the small desert panzers contain roughly 300 tanks, so we ourselves must have had some 900 machines on the battlefield originally.

The next few days after battle had been joined demonstrated how much we had lost. The enemy concentrated on Bir Hacheim, so as to get round to our rear. We had an exceptionally gallant and tough garrison of Free French there: it has been said that we should have kept that garrison in being till the last possible moment. But attempts to relieve it, or reinforce it, were not successful. The enemy held us off with his armour while he pounded the little strong point with his other arm; and we did not have the means apparently to reinforce the garrison by air.

Following Wavell's and Wilson's tactics the previous year, General Ritchie could now have cut his losses and retired at once to Tobruk, at the same time keeping the Bir Hacheim, Gazala and even Knightsbridge strong points alive by every means in his power. With his remaining tanks he

TOBRUK WAS CAPTURED FROM THE ITALIANS ON JANUARY 21, 1941

From that time, right up to June 1942, it remained in British hands—although for a long period it was cut off from all reinforcement from the landward side. In November 1941 it was relieved by the 8th Army; but after the great eastward drive of Rommel in the month of June it fell after a three days' resistance, and is now held by the enemy. When we occupied the town in January 1941, the Italian cruiser *San Giorgio*, of 9,200 tons, was found in the harbour: she had been heavily attacked by the R.A.F. and set on fire. This picture was taken as our troops entered Tobruk for the first time, and shows the petrol stores going up in flames and smoke

AFTER THE FALL OF BIR HACHEIM: A picture taken shortly after this fortified position was taken by the Germans. It had been defended by Free French troops for nearly three weeks in the face of very heavy enemy attacks

A SOUTH AFRICAN SQUADRON, packed up and ready to move from one desert landing-ground to another. These changes of position were carried out with speed and efficiency

could possibly have held Tobruk and the strong points. The road to Egypt would, of course, have been left open, but Rommel might not have cared to risk a full-scale drive to the frontier and beyond with such a menace on his flank.

But General Ritchie did not follow this plan. First, he withdrew the Bir Hacheim garrison—with the loss that such an operation would naturally entail. Second, he continued to oppose Nehring in the open spaces between Knightsbridge and El Adem. The Germans replied by bringing their heaviest armour round from Bir Hacheim in a wide sweep as far east as El Adem itself, whilst they prepared for further heavy blows.

Rommel's plan took effect on June 13, two days after the abandonment of Bir Hacheim. The enemy stealthily brought up their 88-mm. anti-aircraft guns, previously used with such good effect against our tanks in the preliminary battles. Evidently the guns were kept carefully in the background till an expected dust-storm arrived. Under the cover of this, which hid the goings-on from our land and air reconnaissance, the guns were rushed into a wide arc and mounted. A number of German tanks simultaneously moved forward towards Ritchie's tanks.

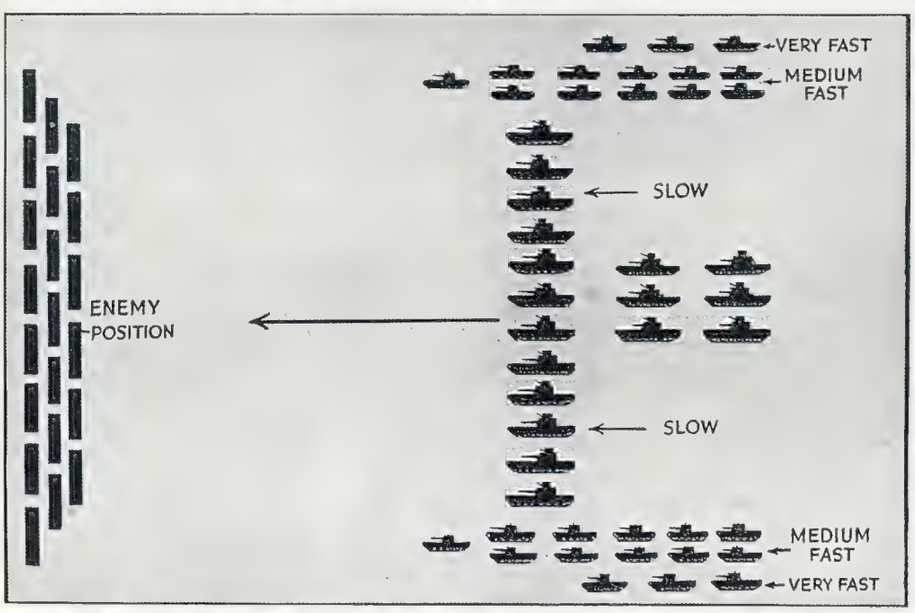
The latter promptly engaged the Germans, who fled. In the subsequent pursuit our tanks ran right on to the muzzles of those hidden guns. Two hundred and thirty out of the three hundred British vehicles were put out of action as a result of this ambush, for the loss of a much smaller number of German tanks!

In less than three weeks, therefore, the 8th Army had lost the bulk of its tanks, and our position was now unenviable. General Ritchie had little option but to retire on Tobruk at last.

"FIGHTING IN THE DESERT HAS MANY FEATURES IN COMMON WITH A NAVAL ENGAGEMENT": A recent picture of Axis tanks manœuvring in Libya

GERMAN ARTILLERY IN ACTION AGAINST TOBRUK: A systematic bombardment of the perimeter was carried out by the enemy before the town fell

The PROBLEM of the GENERAL GRANTS in LIBYA



WHEN THE HEAVY, AND COMPARATIVELY SLOW, TANK GOES INTO ACTION: It dictates the speed of the armoured column, and can therefore best be used in the manner indicated here: alone, in a mêlée, it becomes vulnerable owing to its inability to outmanœuvre a faster opponent

The accompanying diagram has been prepared by our artist to illustrate one particular difficulty that must face our tank commanders in the desert, namely, what tactical use to make of the rather peculiarly constituted General Grant tank. This machine is in many ways a valuable weapon, especially as it has heavy armour—what our own tanks have often lacked in the past—but it is apparently slow and cumbersome, and its main armament of a 75-mm. gun, though equal in weight to that of the German Mark IV tank, is dangerously handicapped by the fact that it cannot be traversed from side to side without moving the whole vehicle.

If one of our commanders is presented with a dozen General Grants, what can he do with them? Their slow speed would dictate that of any column in which they were incorporated, while, if placed at the spearhead of an attack on prepared positions, they might easily be out-gunned in a mêlée. It seems, indeed, that the General Grant is unsuitable for the purposes of the fluid desert war. It is obviously an infantry tank, which could be very valuable in breaking a way through wire, and across machine-gun nests for advancing troops—the same function that was fulfilled by our own infantry tanks in the campaigns of Wavell against the Sidi Barrani, Bardia, Tobruk and other defences.

Our diagram shows, however, that the Grant could be used in a full-scale armoured attack, the purpose of which is to effect a breach by sheer force of impact. After the breach is opened, according to the classic German conception, fast tanks are supposed to make off in diverging directions to mop up interior defending strong points, and the work of the Grants would then be temporarily done. That work would have consisted in the mass crushing of the initial defences at the centre.

"HOW ROMMEL OVERCAME TANK TRAPS AT TOBRUK": Units of German Sappers were sent out and, with infinite industry, made bridges over every British trap, so that the tanks could advance. (This laudatory statement, as well as the picture, comes from an enemy source, it is almost needless to say!)

THE ROYAL NAVY AT WORK ON THE EDGE OF THE ARCTIC CIRCLE WHERE, AT THIS TIME OF THE YEAR, IT IS NEVER DARK: The sun dips only just below the ho zo waters the sea looks like polished ebony. The vessel shown in this drawing is one of the Flower class corvettes, 193 ft. in length: she carries one l-i

"ROUGHING IT" IN THE ATLANTIC: A small ship in a British convoy battles with a heavy sea when trying to maintain its place. All types of merchantmen are now used on these ocean "life-lines"

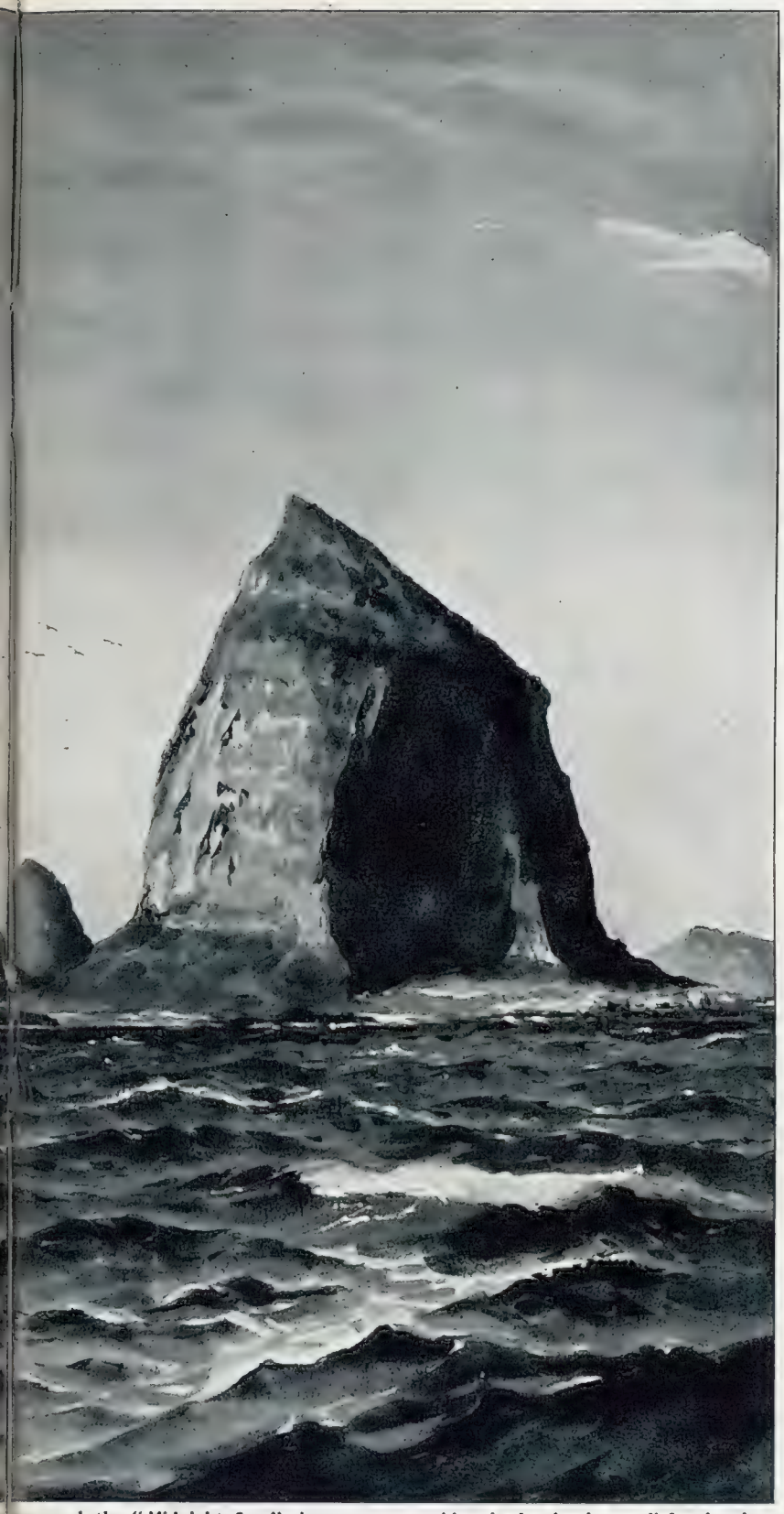
The task of watching the waters o th by Coastal Command of the R.A. units, is an arduous one: but still mo s whose duty it is to operate farther t of the North Atlantic break agains ch

There is very considerable enemy acti and Trondheim have been developed by which sorties on Allied shipping are fre the North Atlantic has to be watch i long-distance schemes which the en y

Farther up the Norwegian coast e Tromsoe: these were designed for the convoys to Murmansk. Throughout i l characterised by very striking rock f ma artist in his drawing above.

The Flower class corvette depi d called for under the 1939 Supplem ar were laid down for the Royal Navy to have been built besides. This ty constructed, and it is inexpensive to be armoured against machine-g considerable extent, relieved the hard vo

On left—It is the duty of the Royal Navy to protect the convoys: it is equally the duty of each ship's captain to see that his vessel maintains her allotted position during the Atlantic crossing. This is not always easy with ships of different tonnage, speed and build, operating against wind and water, fair weather and foul!



zon and the "Midnight Sun" shows up everything in hard, clear relief. In these l-in. anti-aircraft gun and multiple pom-poms—*Drawing by Wm. McDowell*

The NORTHERN PATROL in the ATLANTIC

GUARDING THE NORTHERN TRADE ROUTES: A view through the screen door as a British destroyer approaches land, showing the rocky nature of the coastline in these northern latitudes

the North Sea, ceaselessly carried out in conjunction with the various naval strenuous is the work of those vessels the north, where the heaving waters the rock-bound coasts of Norway. ctivity in this region, for both Bergen by the Germans into strongholds from frequently made. This has meant that for local activity as well as for any ny may be cooking-up. e other German bases—at Narvik and the express purpose of harassing the length the North Atlantic coastline is mations such as those included by the

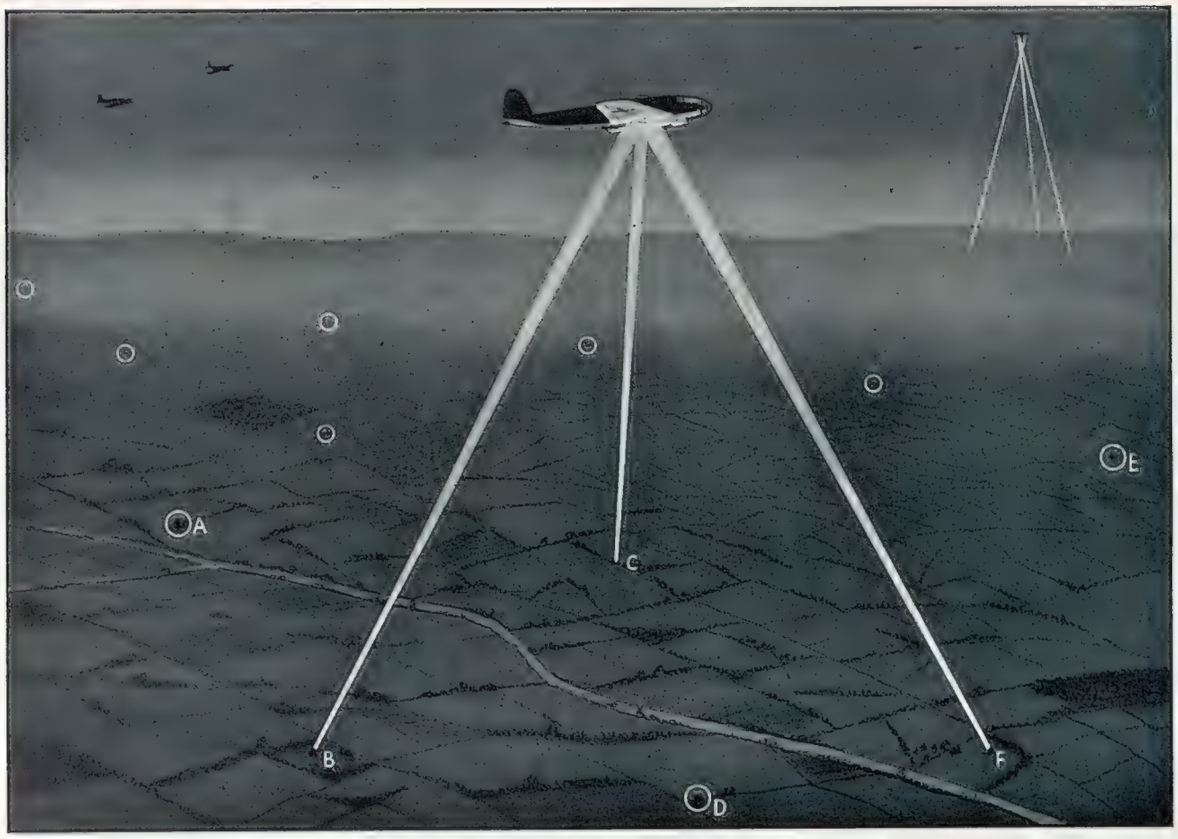
ld is one of fifty-six similar vessels ary Estimates: subsequently ten more Canada, and many more are believed of warship can be quickly and easily operate: the bridges are reported bullets. The corvette has, to a worked destroyer of many of its duties.

On right—During the past winter, Canadian officials have been frankly puzzled as to how enemy submarines were able to operate in high latitudes against all the perils lying in wait for the sub-mariner. They suspect a German development of "de-icing" apparatus to keep periscopes and hatches free in heavy weather

LOOKING FOR TROUBLE, A SPEEDY LITTLE CORVETTE RACES SEAWARD, dark and grey against the stormy sky. These wasp-like ships are doing superb service in clearing U-boats from Canadian coastal waters

FINGER-POSTS OF THE NIGHT

The Development of the Modern Searchlight—an Important Part of Britain's Anti-Aircraft Defences



On left—An enemy plane entering any of our vulnerable areas can be passed on from searchlight to searchlight as it flies onwards. The conjunction of three beams indicates the position of the aircraft and signals the attack for the interceptor night fighters behind. The searchlight at **A** has "dropped off" the target and "passed on" to **B, C** and **F**. Shortly **B** and **C** will "drop off" and "pass on" to **D** and **F**. This system works in any direction with the other searchlight locations.

Below—A searchlight detachment usually consists of ten men, numbered as shown below. Two are on the lorry, three on the searchlight, three on the sound-locator and two are spotters. **A** is the petrol electric generator; **B**, the searchlight; **C** telephone cable from the sound-locator; **D**, the latest Mark VIII sound-locator; and **E**, the machine-gun for low-flying aircraft

THE SEARCHLIGHT CREWS OF TO-DAY WORK IN A TRIANGULAR FORMATION

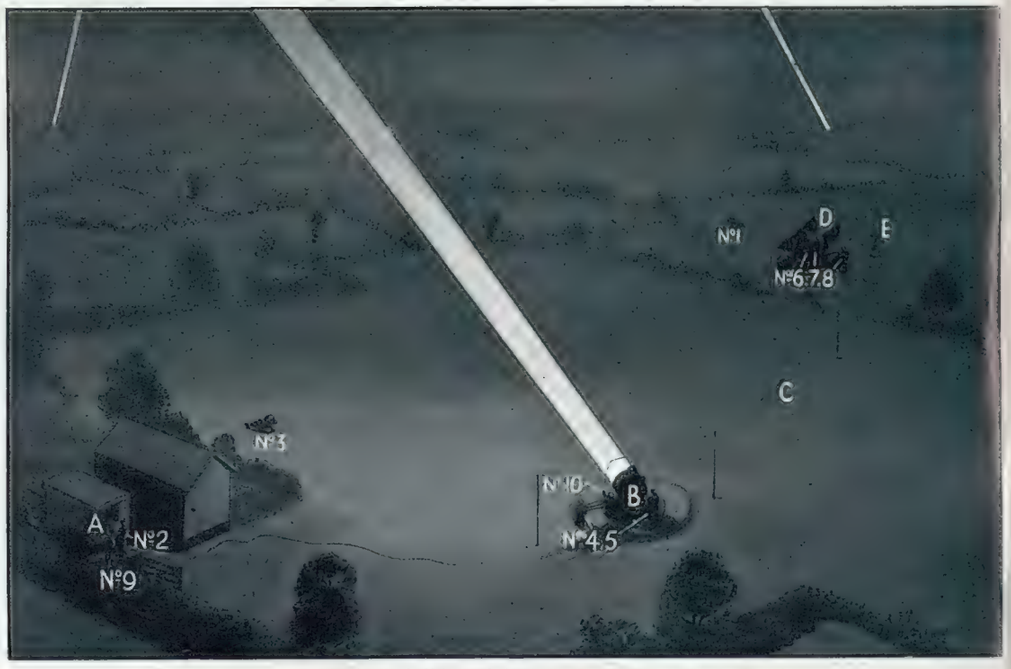
Drawing by L. Ashwell Wood (see notes at right)

SEARCHLIGHTS are an integral part of the defences against night bombers. Together with A.-A. guns, sound-locators and night fighters, they make up a combination which keeps the bombers' ceiling high, and prevents them from dropping their bombs accurately on a target.

A carefully thought-out scheme is in operation all over Britain, which locates searchlight units in places where they are most suitable for protecting definite localities. Found in the most unlikely places, they are actually placed with the greatest forethought for their probable usefulness. Usually, searchlights work in groups of three, with one master light for the unit. Supersensitive sound-locators, positioned nearby, direct the pencil beams that cut through the night sky.

On the site of a searchlight unit, two shallow pits and a sandbagged light, together, maybe, with a wooden hut for men's living quarters, will be all that distinguishes it from the surrounding pasture-land. In one of the pits there is a special type of swing chair, which enables a spotter to recline on his back, powerful binoculars pointed up to the sky. Men carrying out spotting duties are specially trained so that they can immediately recognise any type of plane, either by sound or appearance.

In the other pit is located the special apparatus which is the "ear" of the ground defences. Developed during the last war from the doctor's stethoscope, sound-locators consist of large trumpets



A SEARCHLIGHT DETACHMENT AT WORK: This is the smallest unit: its method of operation is described in the notes above—*Drawing by L. Ashwell Wood*

which can be swung in any direction, and are capable of picking up the sound of an aeroplane engine many miles away. As two men of the crew listen on headphones, a third adjusts the trumpets right or left, up or down, until the sound from the plane's engines is heard at equal strength in each trumpet. When that adjustment has been made, the apparatus indicates the exact position of the plane in the sky. Telephone communication between the sound-locator and searchlight crews enables the questing beam to be directed exactly at its target, 20,000 ft. or more above the earth.

The art of directing and controlling the tremendous beam sent out by a modern searchlight makes careful training of its crew essential. A very small movement of the control wheel on the powerful light means that the beam is thrown hundreds of yards across the sky, and accurate movement as the plane progresses through clouds requires skilful handling by the searchlight crew. When the giant lights are used for lighting up a plane as a target for the A.-A. gunners and night fighters, units operate in

***On left*—A 90-CM. SEARCHLIGHT UNIT IN ACTION:** The searchlight is usually protected by a pit, and the man on the elevating and traversing control by a path dug round the pit. The following is a key to the various numbers:

1—Telephone wires from sound locator.
2—Ventilating fan.
3—Flue.
4—Parabolic reflector.
5—Positive carbon.
6—Negative carbon.
7—Carbon rotating gear.
8—Counter weight.
9—Control switches.
10—Control arm.
11—Elevating control gears.
12—Support pillar.
13—Caterpillar track.
14—70 volt-150 amperes supply cable.

triangular formation. Searchlights are grouped so that each working from the corner of a triangle throws a converging light on the plane as it passes overhead. As it passes out of their range, other units along its course take over, and a continuously-illuminated target is passed on from one group to another.

In addition to the illumination of a hostile target, for which searchlights were developed during the last war, modern powerful night eyes are used for other purposes. They now provide guiding beacons for our night bombers as they return home to their bases after operations over enemy territory. By lighting up barrage balloons, they provide a recognisable path for the return journey.

Many airmen who have been forced to bale out of their machines owe their lives to the searchlight crews, who have picked up in their piercing beam the fluttering parachute as it glided down over the sea.

In recent years, searchlights have become bigger and more powerful. Standard mobile units usually consist of 90- and 150-cm. types. These, however, are not the largest or most powerful; but a short description of the latest 60-in. type will show the great improvement made in this apparatus during recent years.

Source of light for these giant night eyes is the arc produced when two carbon sticks are placed near to each other—one positive and the other negative. A core of thorium or similar rare earth is put in the carbons, and the vapour given off becomes incandescent at a temperature of 5,430 deg. Fah. The greatest problem of early searchlight designers was to overcome effects of the great heat produced. In 1915, the American inventor, Sperry, discovered a method for cooling the filaments. The enormous heat is dissipated through a copper jacket filled with spirit which surrounds each carbon.

Through this invention it has been possible to continue the development of searchlights, and these newest spears of light give a beam of 600,000,000 candle-power that will illumine a plane flying six miles above the earth. Incidentally, were it not for the curvature of the earth the powerful light from one of these giants could be seen 150 miles away from its source.

About the equivalent of 15 h.p. of output is necessary to keep a flame pouring across the 1-in. gap of a big searchlight. Surprising as it may seem, a big voltage is not used to operate such a tremendous producer of light. About 70 volts is all that is required, but anything up to 150 amperes of current is necessary.

To direct the light into a beam, a parabolic mirror is mounted behind the carbons, this curvature being the type that would radiate light in parallel lines. Production of these mirrors is the result of very careful optical work, and they must, of course, be cleaned and handled with the utmost care when the searchlight is set up on the site.

Many people will have noticed a difference in the appearance of the light from searchlights as the war has gone on. At first we saw a contracted beam which spread a wide patch of light over the sky. More recently, the light has appeared as a thin, pencilled beam, of great range and intensity.

As more new powerful apparatus has come into service, sky lights have become more intense. High-flying enemy planes have necessitated the development of a modern beam, capable of being focused and directed so that a spear of light reaches out.

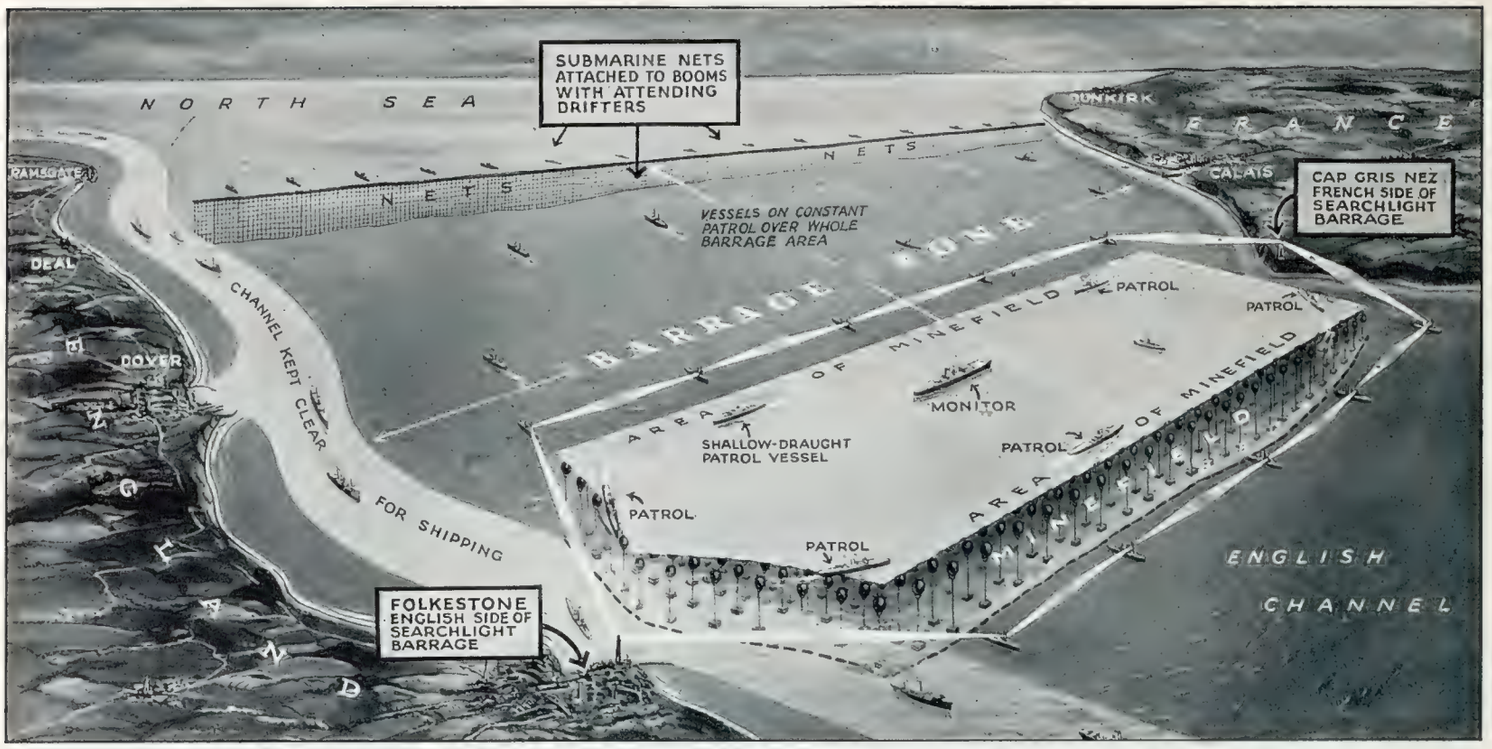
But, in addition to variations in power and types of searchlights used, there are other limiting factors which change the appearance of the beam in the sky. Weather conditions play their part. A low ceiling of cloud will reflect back the light to earth, thus making the beam appear short. Another factor is the angle at which the light is directed. Pointing directly overhead at 90 degrees, the beam will light up a comparatively small patch of sky at a given height. By reducing the angle to earth, a greater area will be illumined at the same height, and this will make a considerable difference to what is seen by an observer on the ground.

British pilots returned from raids over Germany have reported the use of coloured searchlights. The idea seems to be to confuse the attackers, but it is generally conceded that the introduction of reds, blues and other hues adds very little to the success of the defence. First used as a giant headlamp for warships, the searchlight now plays a very important part in air defence.

AN A.-A. BATTERY IN ACTION DURING A RAID ON THE COAST, showing how the beam of a very powerful searchlight appears to curve. Were it not for the curvature of the earth the powerful light from one of these giant beams would be seen 150 miles away from its source!—*Drawing by Roland Davies*

A CONCENTRATION OF ENEMY SEARCHLIGHTS OVER GERMANY: A Stirling bomber held in the light of thirty powerful beams. The concentration of a good number of rays is a feature of the defences in Western Germany—*Drawing by Roland Davies*

A SEARCHLIGHT IMPRESSION: When the beam strikes a mass of low cloud, it is apt to take very odd forms, including the one depicted above—*Drawing by Roland Davies*



THE DOVER PATROL AREA AND THE HISTORIC BARRAGE OF MINES AND NETS which was established and maintained during the last war

This diagrammatic picture shows the famous Dover Barrage as it was established and perfected during the 1914-18 war. One of the best accounts of its formation, and of the difficulties of maintaining the barrage has been given by Mr. Winston Churchill himself. A wide, compact mine area was laid; outside this was a continuous searchlight barrage, one ray meeting the next, as shown in the drawing above. Further to the north was a boom of nets stretching right across the Channel with the exception of the opening for ships at its western end. Patrol vessels kept constant watch on the whole area. The barrage gradually forced submarines to go by the north route into the Atlantic as attempts to pass by the Straits became too dangerous. In the present war, the fact that the whole coastline of Northern France is now held by the enemy has frustrated any attempt to create a similar barrage

The "BOMB-ALLEY" PATROL

The Great Work of the Famous Dover Patrol in the Last War and in This

Described by FRANK ILLINGWORTH (who has Spent Two Years Reporting on the War from Dover)

AT only one sector of the world front are German and British land, sea and air forces in continuous contact—at the Dover "bottleneck"; and the no-man's-land separating "Germany" and Britain being a narrow strip of water, it is on the Navy, *on the Dover Patrol*, that the heaviest responsibility lies.

The "D.P." (local vernacular) is without a doubt the hardest-worked unit in the Royal Navy. It's the first line of defence: it must deny the enemy access to the all-important Straits, and on its shoulders rests the responsibility not only of shielding Britain from assault via the Channel, but of keeping open to Allied shipping the wedge of tumbled water which is so essential to the strategic and economic well-being of the nation.

And with infinite patience and toil, the Dover Patrol fulfils its hazardous duties from a base within easy range of enemy long-range batteries, within four to five minutes' flying time of enemy aerodromes, and twenty-five minutes' "sailing" time of Nazi E-boats. Indeed, with the help of observation balloons (which we sometimes see floating over Calais), the Hun can look right into Dover Harbour!

The D.P. shouldered its early duties with the same advantages of its famous 1914-18 predecessor. With marked flamboyance it dominated the strip of water between the North Foreland and Dungeness Point, flanked by the English and French coasts: from Calais a similar force operated.

The Great War saw the first Dover Patrol shepherd 5,600,000 troops across the Channel, deliver 9,500,000 mail bags without losing a soldier or a letter, and escort 20,000,000 tons of Allied shipping through the Straits.

The Channel was indisputedly "English." U-boats seldom risked conclusions with the ever-vigilant Dover Patrol, and only once did a major force of enemy destroyers make so bold as to invade the Patrol's "beat." The latter occasion saw six Hun destroyers pump some 200 shells into what it fondly thought was the Patrol's H.Q.—Dover. *Swift* and *Broke*, a-prowl in the Straits, saw the gun flashes, wheeled, charged into battle. With such speed was the action fought, that at one time the Germans put the British force at six ships, while *Swift* and *Broke* imagined they faced up to fifteen enemy destroyers! Never again did German destroyers cut through the Straits. The bottleneck was virtually closed to the enemy.

Until June 1940, the Second Dover Patrol proved as effective. Its duties were fundamentally the same. It escorted the B.E.F. to France, kept the Straits open to British shipping. Then it helped bring the B.E.F. home again. And with the fall of France, the rôle of outpost was thrust upon its willing shoulders. To-day, the D.P. *shares* the Channel with the enemy.

Inevitably, it has suffered many indignities spared its Great War predecessor. I've seen patrol ships bombed viciously, cannon-gunned, shelled by 14-inch German coastal guns, mined. I've seen its boats nearly blown out of the water. One leave-night, a youthful sailor began to cry over a glass of beer when sirens wailed. He remembered how a score or so of Ju.-87 dive-bombers had howled down on his cockleshell of a craft. But he soon got a grip on himself. And that night he was at sea again, in another ship, patrolling the Straits.

I count it a privilege to have fraternised with personnel of the Dover Patrol for two years, to have seen them in action. Theirs is the most silent unit in the Silent Service. For this reason, one learns more from watching the Patrol in action from local cliff-tops than from an Admiralty-sponsored visit to the ships.

One day, two little mine-sweepers, trawlers of peaceful days, drew the fire of enemy long-range gunners. Great gouts of water leapt up round the ships as, with patience and infinite toil, they ploughed along within a mile of the shore. For long moments they were hidden by columns of water. Four at a time, shells fell perilously close to them. But the little ships continued on their way, apparently unperturbed. Infuriated at this lack of success, the Hun despatched his dive-bombers.

From cliff-tops, just below the diving bombers, and just above the now lurching trawlers, we watched a round in the battle of the Straits fought between planes and ships. Bombs whistled down, exploded amid showers of steel and water. The trawlers bobbed like corks in bomb-tormented sea. "Gushers" of water hid them.

Lying close to the ground, binoculars glued to his eyes, a war correspondent gave us a running commentary on the battle: "The skipper of XYZ2 is waving instructions. I suppose he can't be heard over the din. Seems calm enough. A plane is diving. XYZ's gunner is holding his fire until the last second. Now, *now* he's firing, slap into the Junker's face. Bombs are dropping. A near miss! The plane! The plane's *hit*! It's *hit*!"

Smoke poured from its black tail as the Junkers sped crazily into the sea. Then Spitfires arrived. . . .

Though the Dover Patrol has suffered many indignities, it must not be thought its rôle is entirely defensive. It's a hard-hitting unit, as the Hun knows. Go to the cliff-tops when gunfire rumbles inland from seawards, watch tracer bullets flickering across the sea from across the Channel. It'll be the Dover Patrol carrying forward the tradition of *Swift* and *Broke*.

Night after night "our light naval craft" venture across the Straits. With British wings sweeping the Channel, the Hun no longer dares to send his coastal shipping abroad during daylight. His tankers and transports creep out by night, and in their track lie ships of the D.P. They've fought many more successful actions than the Admiralty admits officially.

Not only does the Dover Patrol keep the Straits open and provide a screen against enemy attacks; not only does it smash into German Channel shipping. I think it has played a not inconspicuous part in the Commando raids "across the way." If this is the case, it is practising for the final assault on Occupied Europe.

BOISTEROUS WEATHER AT SEA: The destroyer is lifting well out of the water, with most of her hull visible: a few seconds later and she will be almost completely hidden as she sinks down into the trough again

ANOTHER MIDGET SUBMARINE

One of the three Japanese vessels which attempted to raid Sydney Harbour in May

THE BOW OF THE JAPANESE SUBMARINE as it was raised from the harbour: This view shows the torpedo-tubes in the forward compartment. The one on the right projected about three feet when the steel ropes were made fast for the lift, but it slipped back as the submarine was swung vertically into the air by the crane

THE CONNING-TOWER OF THE SUBMARINE WITH AN OPEN HATCH, after it had been raised above the surface. The periscope can be seen clearly; and on the deck is a compass. An iron guard, to enable the submarine to pass under cables or nets without fouling them, surrounds the conning-tower. In front of the guard are more steel teeth

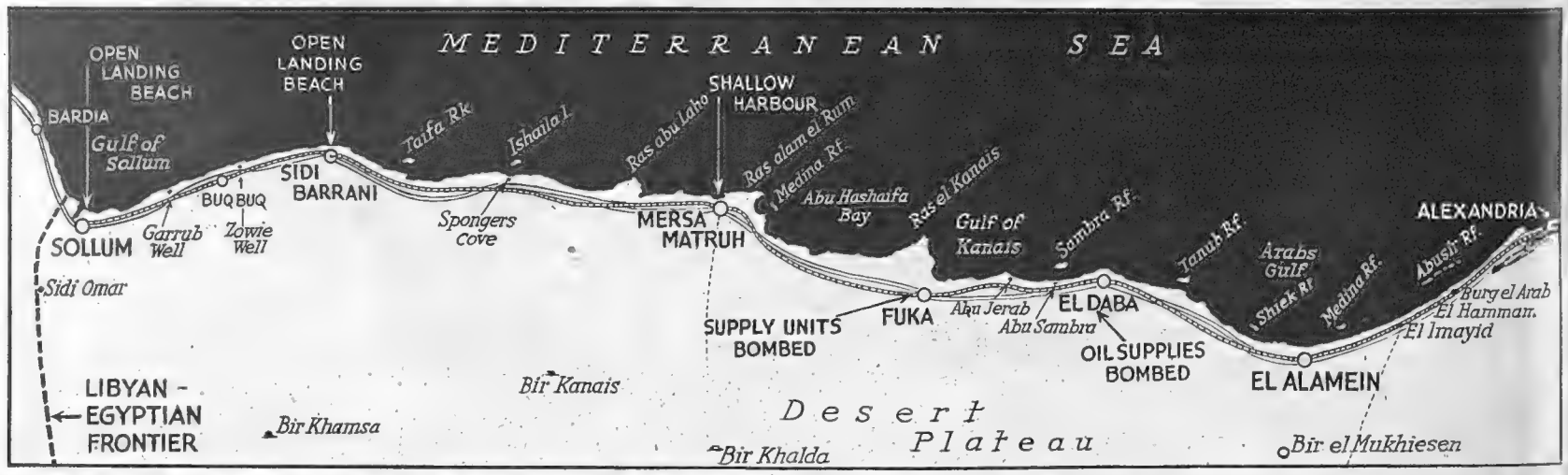
A CLOSE-UP OF THE SUBMARINE'S STERN, showing how cleanly the explosions of the depth-charges sheared through the thin metal of which the vessel was composed

THE TINY PROPORTIONS OF THE CONNING-TOWER are here clearly indicated. Note the tiny compass in front of the periscope tube

On May 31 it was announced that the Japs had attempted to raid Sydney Harbour: three of their "midget" submarines were destroyed as a result. The vessels were of a similar type to those which operated against Pearl Harbour: two of them were sunk by depth-charges and the third by gunfire; it is thought that no more than three were engaged in the attempt. The only damage caused by the raiders was to a small harbour vessel of no military value. One of the two submarines sunk by depth-charges has now been raised to the surface: not only does this show the damaging results of the under-water explosions which destroyed it, but it has also revealed some of the constructional secrets of these remarkable miniature warships. Particulars of these are given beneath the pictures reproduced on this page

THE ENEMY SUBMARINE LIFTED COMPLETELY out of the water by a giant floating crane. It is estimated to be between 60 and 70 ft. long, with a diameter of about 6 ft. There is about 15 ft. blown off the stern, apparently by depth-charges

A FIRST IMPRESSION OF THE CITY OF ALEXANDRIA, AS ONE APPROACHES IT FROM THE SEA—a "vision of palaces and mosques, of a tall, white lighthouse, a line of buildings shining, rising from the sea; tower beyond tower. . . ." This drawing by Mr. Dawson conveys the wonderful scene as the artist witnessed it on several occasions during the last war. The vessel approaching the quays is a typical modern liner of about 16,000 tons: the destroyer in the middle distance is of the renowned Javelin class of 1,690 tons. The small boat alongside the liner belongs to the Harbour Control



THE LANDWARD APPROACHES TO ALEXANDRIA, showing the many small harbours along the Libyan and Egyptian coasts. There are many points at which Rommel could land supplies for his army at a pinch; he holds the main shore road, and the railway, but probably he does not possess rolling-stock to fit the gauge of the Mersa Matruh line constructed by the 8th Army

THE SEA-GATE TO EGYPT

The Great Port and British Naval Base of Alexandria — *Two Personal Impressions by Montague Dawson (Who Had Entered the Harbour, on Service, Several Times During the Last War)*

"ALEXANDRIA has a population of about 600,000, two magnificent harbours of over 2,100 acres in extent, a vast series of quays and docks, an annual visiting tonnage of about 5,000,000 tons, and a big export trade." In addition to this, she can provision a fleet, bunker half a navy, but—above all—control the rich regions to the south.

Little wonder that Rommel and his master Hitler have their eyes fixed on the gleaming East and on the treasures of Alexandria! The enemy's drive seemed to be bringing Egypt within his grasp, until Auchinleck called a halt at El Alamein and gained time for the arrival of his reinforcements.

Inevitably, the gleaming city has suffered from air raids: Axis bombers have been hammering at city and harbour alike. For years Alexandria was the resting-place of units of the Navy, its harbour providing facilities as good as any in the Middle East.

The two main drawings on these pages have been made by Mr. Montague Dawson, who several times during the last war entered the harbour at Alexandria on service with the Royal Navy.

A PEACETIME SCENE IN ALEXANDRIA HARBOUR. This famous port has for long been the home of the Mediterranean Fleet: it lies on the western side of the Nile Delta, and its magnificent harbour is linked with Cairo by road and rail and river. Alexandria lies some 820 miles from Malta, 530 miles from Smyrna, and 150 miles from Port Said, northern entrance to the Suez Canal. This picture was taken before the war and shows the great number of British naval vessels at anchor in the fine harbour

Below—**NIGHT AT ALEXANDRIA: Anti-aircraft shells bursting amongst the tropic stars: the guns are located behind the city buildings along the water-front. In the foreground are R.A.F. flying-boats based on the harbour. Alexandria has suffered from a number of night attacks by Axis bombers**

MUSIC for the WORKERS and the FIGHTING FORCES

Man-power, Lack of Raw Materials from Abroad, the Shortage of Supplies, and Many Other Factors, are Operating in the Music World —as in Others. Yet Relaxation is Essential for Workers and Forces Alike. Here the Whole Position of the Music Industry is Reviewed

By CHARLES GRAVES

MUSIC always enjoys a boom in wartime. It acts as a magic carpet, as an escape, and justifies all the other platitudinous phrases applied conventionally to it. This war is no exception. Gramophone records are enjoying the biggest boom in history, sheet-music sales are sky-rocketing, concert halls are packed, while the B.B.C. scheme of introducing music to the factories with various programmes such as "Music while you work" and Workers' Playtime is a prodigious success. As for Ensa, this much-maligned organisation is carrying music as well as entertainment to thousands of Navy, Army, and Royal Air Force audiences all over the country.

There is, of course, another side to the picture. The shortage of paper is affecting sheet music; the U-boat campaign is affecting the manufacture of gramophone records, which are made of Indian shellac; more and more skilled workers are being drafted from firms which make musical instruments into munition works; the Queen's Hall has been blitzed; Covent Garden is a dance hall; Drury Lane has been taken over by Ensa; hundreds of musicians, both straight and jazz, have been conscripted; no German or Italian singers are available for a grand opera season.

Already in the United States the manufacture of gramophone records has been cut down by 70 per cent. In England the new Limitation of Supplies edict lays down that no more musical instruments are to be made after August 1, except for Ensa, the B.B.C., and educational and Service purposes. Incidentally, this will mean that the value of second-hand musical instruments from grand pianos to mouth organs will increase rapidly.

There is to be a severe cut in gramophone records. Until now these have been supplied under licence (i.e., on quota). Now they are also manufactured under licence.

The call-up of musicians is having a considerable effect on the music situation. It is a morbid joke that band leaders are having to advertise for players suffering from incurable diseases. Against this, Mr. Bevin has announced that relaxation is essential for workers. To which the band leaders reply: "We will do our damnedest, if we can keep key men to train the new entry." So far, the Ministry of Labour has done nothing about it. True, there have been certain deferments in the case of bandsmen employed by Jack Payne and Geraldo, who do so much B.B.C. work; but at the moment there are only 2,000 dance-band musicians who have not been called up. These include many who are medically unfit.

The trouble is that if an individual bandsman is conscripted, it may mean that a whole section of, say, saxophonists or brass is put out of action. The official answer to this is that the Government is not concerned with the standard of music. All it wants is for the music to go round and round.

The R.A.F. has been quick to take advantage of the situation. It has a Central Military Band, a Symphony Orchestra, a leading band known as the Squadronaires, which is probably the best that this country has ever produced in the whole of dance-band history, together with a hundred similar bands of five pieces.

It is curious that this war has not yet produced any great tune from an English composer. Admittedly, too many good routine tunes are coming from the United States to give any amateur over here the chance of popularising a song. The fact remains that no really stirring song or march has yet been produced. Top of the bill in public esteem at the moment are "Deep in the heart of Texas," "How green is my valley" and "I don't want to walk without you." Many of the more popular melodies at the moment are shameless thefts from previous songs.

The B.B.C. has taken the lead in advising band leaders that it wants good rousing songs and not soppy, debilitated ones. The trouble is that the British troops, and civilians too, prefer sentimental songs—"My little grey home in the West" and "Down Mexico way" are good examples of this. None of the regular battalions in the British Army ever sang "We'll hang out the washing on the Siegfried Line." They preferred to point out, musically or unmusically, that "There's no promotion this side of the ocean," as they did in the last war.

One of the more healthy musical developments of the war is the growth of the Rhythm Club movement. Rhythm Clubs are formed of swing fans who study records with the concentration of a virtuoso. Harry Parry, the producer of the Radio Rhythm Club, is the great maestro of this department of music. Another department, of course, is the provision of music for the factory workers. Extraordinary statistics are available in this connection. When, owing to a breakdown, no music was used in a Yorkshire munition works, the production dropped 13 per cent., but when music was reintroduced, the normal output was not only regained but increased by 5 per cent. In another North Country firm, production has increased by 12½ per cent. to 15 per cent. during the hour and a half after the "music-while-you-work" programme.

On the other hand, the greatest care has to be taken in the selection of the music. It has to be an incentive without being a distraction, which involves a number of complicated, even contradictory factors. The music has to please the workers, but if it pleases them too much it ceases to be an incentive to work. It becomes a diversion which slows production down. Bing Crosby, for example, is a first-class entertainer, but reproductions of his songs on the air *via* the loud speaker are disastrous. Firstly, the composition may be unfamiliar as regards words or tune, in which case it distracts the workers' attention; and even in the case of songs with which most people might reasonably be expected to be familiar, workers have been known to stop work and jot down on a scrap of paper lines of which they have not been quite certain and which they wanted to learn. Secondly, in view of the fact that singing by the workers themselves is something to be encouraged as a natural stimulus, you might think that a vocalist to give them a lead would be ideal. But Crosby has his own mannerisms, which differ from the dead-on-the-beat singing of the average amateur and are difficult to follow. Thirdly, the tempo and rhythm of the song itself, or the manner in which he or any other singer may choose to present it, may be unsuitable for the workers to maintain their even current of work.

Within reason, it has been discovered that the worker does not feel any undue inclination to time his actions lavishly to a tune if the rhythm is not over-stressed. Instead, if it is steadily and evenly progressive in itself, it acts as a general incentive to steady action by the worker. So music with a simple, flowing rhythm played at a steady tempo is most suitable.

The question of tone and volume is another point. The music must be loud enough to overcome the noise of any machinery in the neighbourhood, but not enough to cause distraction or distress by being too loud. Edgar Jackson suggests as the ideal programme for munition works the "Blaze away" march, "Dancing Time," "Tin-pan Alley Medley No. 43," "Out of the Rag Bag," "Amina," "The Dollar Princess" waltz, "Green Eyes," "Irish Medley," "Aloha Oe Blues," and "Song of India."

So much for popular and/or factory music in wartime. There is a tremendous vogue in classical music. The midday concerts at the National Gallery are packed, and a similar venture at the Royal Exchange can expect similar popularity. Nor are these music-lovers to be found purely among the old fogies and professional music fans. The enthusiasm for serious music among young people is most pronounced. You all know that Queen's Hall has been blitzed, but the concerts at the Albert Hall are crowded.

There is no opera, of course, but the Russian Ballet at the New Theatre and the Cambridge Theatre is a huge success.

The B.B.C. standard of straight music has improved a great deal since Arthur Bliss took over. It is only a pity, in my opinion, that we do not have more military bands parading the streets, or playing more frequently and at longer intervals in places like Trafalgar Square or the Parks.

The best straight orchestras are the London Philharmonic Orchestra, the London Symphony Orchestra and the B.B.C. Symphony Orchestra. In addition, we have the Scottish Orchestra, the Hallé Orchestra and the newly-formed Liverpool Philharmonic Orchestra.

Of our composers, William Walton has come to the fore with his incidental music for "Macbeth" and his new violin concerto played at the Albert Hall the other day. John Barbirolli acts as a magnet whenever he appears in public. Richard Addinsell is doing much to improve the standard of background music for the films.

But I repeat, this country has still failed to produce a really great tune to compare with the "Marseillaise," "Lillibullero," or any of the other famous songs of freedom.

"WORKERS' PLAYTIME," from a factory in the north-west of England. This was the first programme to be broadcast "live" in the B.B.C. North American Service, and took place on the night of June 24-25 last. The girls seen above formed part of the audience on this occasion

THE GRENADIER GUARDS BAND MAKE A RECORD: The famous marching song, "The British Grenadiers," has been adopted by the B.B.C.'s Overseas Service as a "signature tune," and is now heard at the opening of all the Overseas transmissions. This picture was taken before a recording made by the Band of the Grenadier Guards: from left to right are: Mr. Kenneth Wright, the B.B.C.'s Overseas Music Director; Colonel George Miller, Director of Music of the Grenadier Guards; and Dr. Hubert Clifford, the B.B.C.'s Empire Music Supervisor

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this publication should not be taken as an indication that they are necessarily available for export

BRITAIN'S BLACK SAILORS

Recruited from volunteers from Sierra Leone, many of whom have never seen the sea before

The Navy needs no Recruiting Campaigns in Freetown. As soon as word gets around that the Navy is taking on more men a queue like this forms at the Training Office. Many of the boys bring testimonials with them. Some have trekked big distances to join. The Training Officer is here reading one boy's testimonial, and asking questions about his previous work

The recruit has been interviewed, the conditions of service have been explained to him, he has been passed as medically fit. It is time to sign on. He cannot write, and West African names are elusive anyway, so he signs with his thumb-print. He 's in the Navy now !

Rookies' class. A Krooman instructor gives the new recruits their first day's outing on the parade ground. They soon pick up the idea of marching in step, as they have a well-developed sense of rhythm. Their training is as varied as possible

West African natives, from the hinterland of Sierra Leone, are flocking to Freetown to join the Royal Navy. Many of them have never seen the sea before. They are coming from distant villages, from the high mountains, and from the cattle lands of the north. Already several thousand have enrolled, and are now sailors. More experienced men are thus released for duty in other parts of the world.

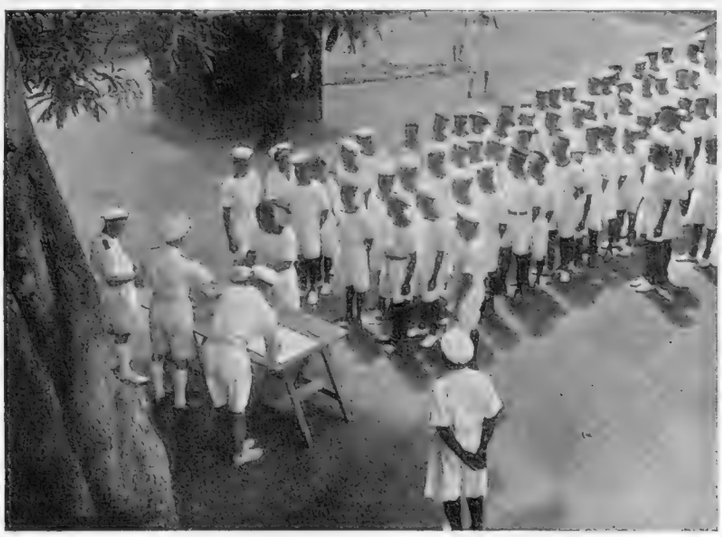
A naval officer carries out the preliminary selection. Some of the volunteers, he finds, have been houseboys. These are earmarked for future stewards. Others, who read and write English well, are listed as prospective signalmen; and the sick bay is able to find useful work for those who have worked in Government pharmacies. Of the West African tribes in Sierra Leone, the Kroos are the only naturally seafaring race. For generations they have lived as fishermen, boat-builders and coast-wise traders. To-day many of their sons are serving in the Royal Navy in sea-going ships.

After the preliminary selection comes the medical examination. The names of the physically fit are taken, and since some of the recruits cannot write, a thumb-print serves as signature on their certificates. Their tribal marks, which are cut into the skin at birth, are also noted. During their preliminary training their day begins early with physical training and squad drill. As soon as the recruit has mastered the rudiments of standing, marching, turning, halting and naval discipline in general, arms drill is tackled. Football is very popular. Talks are given on elementary first aid. In the heat of the day there is a two-hours break, and work finishes at 4 p.m. The elementary lessons learnt, they get more specialised training. Each recruit, when it is seen that he is likely to become an efficient naval rating, is issued with a free kit, consisting of two sets of shirts and shorts, a cap, boots, gym. shoes and socks. A high standard of smartness is demanded, and the native sailors in turn take great pride in their personal appearance. Already many of these native sailors have become petty officers and are themselves training recruits.

A trained recruit receives £3 a month and petty officers earn up to 5s. 6d. a day. All the ratings live at home or with friends, except those serving in sea-going ships. Their training and understanding of discipline should prove of great value to their country's future. As men, they have become more efficient, healthier and readier to play their part after the war in this rapidly-developing corner of British West Africa.

It is Sunday, and Sunday in the Navy means "Divisions"—a parade at which all divisions of the "ship" line up for inspection by the Captain. Before they go on parade, Chief Petty Officer Partridge goes round the ranks. A high standard of personal smartness is demanded and obtained! The boys, in turn, take great pride in their appearance. The boots, worn only on ceremonial parades, are discarded during working hours

Sunday "Divisions"—and the Captain of the Barracks, with his Officers and Petty Officers, inspects the parade. Lined up in front of the White Ensign flying from the mast-head, stand representatives of most of the fifteen tribes of Sierra Leone. They all speak different tongues: many had never seen the sea before they joined. Now they are all sailors—keen, erect, loyal and disciplined



Pay Day comes once a month, and there were over a thousand at this one. Each boy, as his name is called, steps up to the Paymaster, removes his cap and holds it out for the money. On joining, they receive £3 a month, while Petty Officers earn as much as £8 5s. But, unlike white sailors, they are not housed and fed. They live in their own homes, and come every day to the Barracks

MEMORIES OF FIFTY YEARS—

An Experiment in Autobiography—XV

By J. G.

LIMITATIONS OF AUTOBIOGRAPHY.—At this point my *experiment* in autobiography draws to an end, albeit the fruits of experience and the opinions and theories, and the loves and hates, of fifty years of conscious life remain to be harvested, graded and retailed *ad lib.* I will explain. In my submission, an autobiographer can never compete with a novelist, or even with a biographer, in attaining a true balance and proportion when presenting a man's life-story. For the autobiographer is handicapped by a reticence which the novelist can totally reject and which the biographer finds modified by time and escapable with taste and tact. But an autobiographer is bound hand and foot. If he possess the essential qualities of taste and judgment, he may treat of his parents and of his childhood fairly and freely, but of his own married life he can only supply hints and impersonal incidents and can never hope to achieve a balance with the major experiences of his life. I cannot bring to mind any autobiographist (unless you can include Pepys—which is stretching a point taut) who *has* succeeded in this particular, and I doubt whether, if an instance could be adduced, the result would find favour. Human life and its experiences cry out for reticence, and it does not necessarily follow that those experiences which demand most reticence can claim the highest importance. For example, I should say that in a man's life *parenthood* ranks as a major experience in front of marriage. A man may realise that he is a father with some coolness of head as well as with delighted surprise, but while he is engaged to be married or during the first months of marriage, he is often a man in a dream, incapable of rational processes of thought and judgment.

Such, very briefly put, is my contention and opinion, and holding that opinion, I heave at this point a sigh of relief and, like Christian, lay down the burden of my handicap of reticence and self-consciousness, and can henceforth treat with freedom and without self-consciousness of opinions and theories instead of personal incidents, harvested from the past fifty years of life.

The Extremes of a Man's Life.—What a little thing is a man's life, judged on almost any standard of adventuring and doing, if it be set in its place in human history! And what an illimitable field for the harvest of experience and of ideas judged again on any standard of doing!

A man may pioneer along a hundred roads of life, may (like Rufus Isaacs) fail in the City, rise to the highest places in the Law and to the dazzling positions in Diplomacy and Administration, or he may seldom leave his small library in an obscure country parish. But whether he be a Macaulay or a Gilbert White—a citizen of the world or a country parson—he has within him after fifty years of life material for 100 books and thrice two-million words of journalism.

He may derive his theories and experiences of life and men from a shelf of books or a chain of continents, but he will never live to see the reserves of inspiration sinking to the bottom of his well, whether the springs that filled it were all in one field or drawn from five continents. And not even a shelf of books: *one* book, well chosen, would suffice to provide a writing man, reflective, intelligent and industrious, with the material for an output as large as A. C. Benson's, even if he chose to immure himself, not with the Bible, or Shakespeare or an Encyclopædia, but with a single novel, such as Butler's *Way of All Flesh*.

I believe this to be true. If true, it may comfort the stay-at-home and give to the voracious of experience a corrective realisation of the limitless oceans which he claims to trawl with his tiny shrimping net.

I am a "writing man," and I fall between the two extremes; I am neither the one-book hermit nor the Citizen of the Whole World. I have seen some of the New World and of those parts of Europe most accessible to Britain, and have mixed with all sorts and conditions of men in my restricted life and travels.

But I am conscious of the fact that most men who write regularly, constantly repeat themselves, whether they be hermits or cosmopolitans. And, of course, the explanation of that fact is that the human mind is as incapable of absorbing all the riches of knowledge and ideas in one intelligent book as it is of the riches of the Universe.

We absorb a very few ideas out of the millions which touch us (derived from one field or five continents), and we run those few ideas to death in non-stop permutation and evolution and adjustment. How restricted (and yet how constant and unalterable) are my hates and my loves among the manifestations of our social life in my time! Yet those fashions of our social life have suffered revolution after revolution, reaction after reaction, since I first judged them good or bad.

A List of Hates.—When a man attempts to list the things which in a life of fifty years he has hated most among the practices and tendencies in social life, he may be creating a document to damn himself rather than his generation. I can think of no institution or fashion of the Victorian Age—so much despised and criticised—which I hated very bitterly. I was too young to be critical of what was stuffy and hypocritical in that great era. In retrospect at least I hate and despise many features of the Edwardian era which at the time perhaps I enjoyed, tolerated or condoned, notably the snobbery, waste and selfishness displayed by irresponsible sections of the privileged class.

No doubt my critical faculties were not fully developed until the reign of George V, from which time my hates increased and became concrete and contemporaneous. *I have hated and I hate*:—

(1) Social gossip columns, fashionable women who sell their faces for advertisement, scarlet talons and plucked eyebrows, all features in modern journals which perpetuate class distinctions (e.g., daily lists of the birthdays of unimportant sprigs of the nobility).

(2) Jazz music, crooning and other negroid importations, and many revolutionary schools of painting based not on truth but on less worthy impulses.

(3) Commercialised literary criticism of new books; author's self advertisement, cover blurb, literary luncheons, book societies and their choices, and the everlasting aping of Lytton Strachey's cynicism in royal and Victorian biography. The "improvement" of English history and classics by dago film-producers for screen purposes.

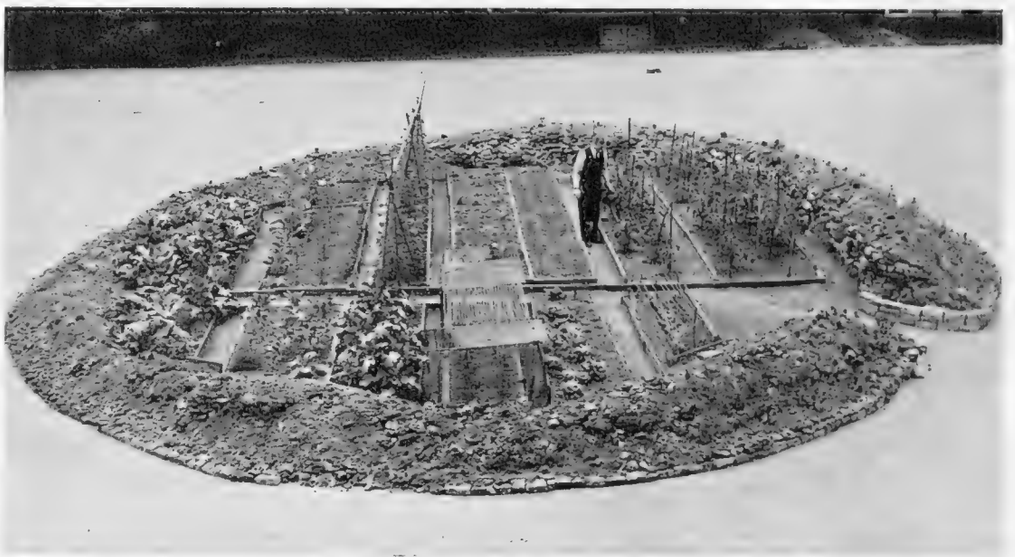
(4) Vulgarisation of the countryside, invasion of cottages by suburban week-enders, the spoliation of the country by litter fiends and Cockney pilferers, the eyesores erected by speculators.

(5) The methods of the baser party politicians, the methods of selection of political candidates in terms of money rather than merit or local knowledge, the methods of party political agents and many features of proceedings in Parliament.

Among my hates have been hack politicians out to make politics *pay*; executive women turned fanatics and militarised, boring and hammering-in their missions without any relieving sense of humour or proportion; London land-speculators aping the Country Squire; suburbanites vulgarising the country with garden gnomes, paddle-ponds and gazebos; district councillors heating their irons in the fire of rural politics; editors and columnists of sensational dailies and poisonous news-reviews; "smart-sets" and all who encourage them; bright young things with one eye on publicity; moral cowards, among whom rank highest so-called critics of modern art and literature; all our self-appointed leaders of thought who know the price of everything and the value of nothing; and, above all, those blinded, myopic boosters who have exploited the inventions of science and helped to turn them from their heaven-sent course to become curses instead of blessings to humanity.

What gall and vinegar I here pour out, and whom do they sting but myself? Clearly "an old Stager," a disgruntled Sir Roger, an inelastic, destructive old curmudgeon. It is best to love all men. But, Hell! it 's better to damn than to be indifferent.

The next, and concluding, article in this series will be published in the issue of August 8



A NAZI BOMB-CRATER AS A VEGETABLE GARDEN: Utilising the crater made when a bomb fell in the grounds of Westminster Cathedral, a caretaker has now produced a fine crop of vegetables. Leaving the crater intact, he has outlined it in bricks and prepared the ground for the tomatoes, peas, cabbages, lettuces and other produce he is now growing

A TOUR OF THE CORNFIELDS NEAR BRIDGWATER, IN SOMERSET: The 201-acre Somerset Farm Institute at Cannington, near Bridgwater, has been the scene of the greatest demonstrations of scientific farming ever held in this country. The Minister of Agriculture, Mr. R. S. Hudson, and thousands of farmers from neighbouring counties came to see for themselves. Many of them came to criticise: they went home commending. Britain must see that every ounce of labour is economically employed, said Mr. Hudson, speaking from a platform in the farmyard to the assembled farmers. District officers of the War Agricultural Committee acted as guides, each taking a party on a personally-conducted tour, showing just how the Institution has put the Minister's words into practice. Some of the farmers, determined to find fault, were shown all that is most modern in labour-saving devices: new-fangled notions were explained and the results inspected. In the above picture, Mr. Powell is acting as announcer from his "office" by the hayrick, advising the visiting farmers of the details of their forthcoming visit

WOMEN AT WAR

THE PARACHUTE PACKERS—Girls busily engaged in the final checking and folding, before the parachutes are packed and despatched: The manufacture of parachutes occupies one of the first places in our war production to-day: the need for these has become more urgent than ever, owing to the ever-increasing number of paratroops now being trained for our offensive against the Continent. This picture was taken at a new parachute factory, where production is going at full speed

OPEN-AIR SPORTS FOR THE GIRLS WHO WORK ON GUN SITES—Members of the A.T.S. competing in a relay-race in the West Country: Teams of men and A.T.S. personnel, engaged at A.-A. sites over a large area of the West Country, have just competed in their first Regimental sports meeting. The events were staged in the shadow of the guns, and the contestants were ready to return to duty immediately on the sounding of the "Alert"

THE A.T.S. SERVE AT AN EXPERIMENTAL STATION OF THE MINISTRY OF SUPPLY: Picking up spent shells from the sands after firing-tests by the guns. The girls employed on this task are equipped with special waders and special uniforms

Girls selected from various sections of the Auxiliary Territorial Service are now fulfilling responsible positions at an experimental establishment of the Ministry of Supply, thereby releasing many men specialists for service with the Forces. The work demands a high degree of physical and mental alertness, and the girls are all specially chosen. In contrast to the ordinary khaki uniform, the girls employed at this Station form a distinctive unit and wear white blouses and blue skirts and forage-caps

The World of Books—By Vernon Fane

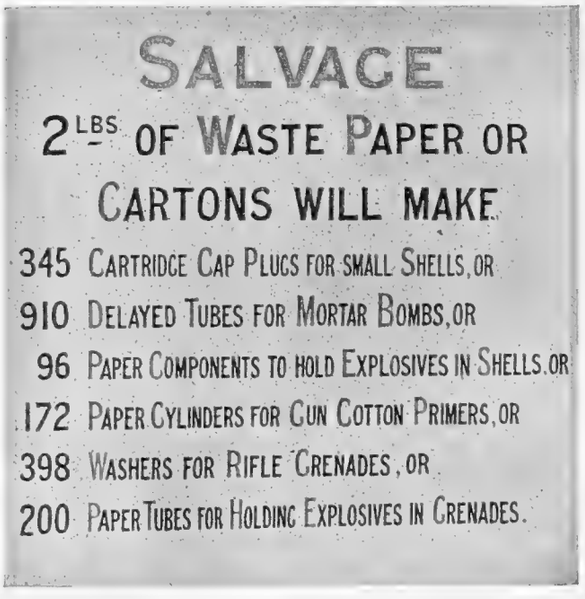
MAINLY ABOUT THE BALKANS

Two British Correspondents Cover the Balkans, and Two Views of Carol of Rumania; An Enchanting Book of Childhood Memories; The Vicki Baum Mixture as Before

RUMANIA is in the book news this week through the literary efforts of two foreign correspondents, this time of English newspapers. Both of them know their Balkans, and both of them have been on active reporting service during this war. Mr. A. L. Easterman concentrates on Royalties and Revolutions, and Miss Clare Hollingworth is responsible for an extremely lively and provocative book which ranges in subject from Yugoslavia to Crete.

Her book, THERE'S A GERMAN JUST BEHIND ME (Secker and Warburg. 10s. 6d.), is designed to put a journalistic cat into a number of diplomatic dovecots, either by impulse or by consideration. The author cracks down, with a vigorous impartiality, on Embassies and Legations and "special missions," and cares as little for mincing words as she seems to for the bare comforts of life. Strong men were apt to fall by the wayside when Miss Hollingworth was on the track of a story, and although she suggests that her implacable sleuthing was due to the demands of her editor, I cannot help feeling that it was much nearer a mixture of a Nonconformist conscience and a very good nose for news.

So she pursued her way by day and by night, across mountains and floods and battlefields ("Corpses on battlefields are always naked," she observes casually), catching up with the news almost as soon as it was made, and putting up with the most extraordinary discomforts in her pursuit. One readily accepts her statement that she can easily sleep on a stone floor, as it is among the lesser drawbacks with which she contended on her own Balkan campaign. Officials were far more wearing, if not actually obstructive, though one quails at the thought of the best entrenched of diplomats confronted with Miss Hollingworth's drive. "If an irresistible force meets an immovable object . . ."



Mr. Easterman's scope is deliberately narrower. KING CAROL, HITLER AND LUPESCU (Gollancz. 12s. 6d.), is a study of Rumania in the last years, chiefly interesting because of his personal knowledge of so many of the leaders in the Rumanian scene, of Carol himself, of Lupescu, and behind and beyond these, of the background of Rumanian affairs.

Mr. Easterman's account of Carol's visit to London at the end of 1938 is well worth studying. He came to secure a British guarantee for Rumania on the same lines as that given to Poland, but left London a "sad and disappointed man." He was given the fullest assurances of the sympathy and encouragement of the British Government, and was "warmly commended, even praised, for his energy and ability in establishing firm rule in his own country . . . but the only other evidence he had to show of the success of his mission to Britain was the beautifully illuminated address in the magnificent casket presented him by the Lord Mayor of London, in the name of its citizens. The only British gold that King Carol saw during his visit from which he hoped to bring aid to his country, was the gold plate at the sumptuous State Banquet in his honour at Buckingham Palace."

One story that Mr. Easterman refutes completely, and with a considerable volume of evidence, is the rumour that was so widely, even internationally, current about Carol at the time of King George's funeral: that Carol had been accompanied or, some said, even replaced in the procession by his masseur, who had been summoned in haste to repair the ravages of an excessively late night.

Both these books, so different in tone, have a short space of common ground—that in which they discuss Carol's act of abdication, though here again it is from widely different points of view. Easterman invests the King's last hours in his country with a certain dignity, shows him composing the last document (in which, incidentally, the word "abdication" never occurs), and saying goodbye to his son with real emotion. Miss Hollingworth has her own views, characteristically direct. "I hold no brief for Carol," she writes briskly. "He was a swindler, a traitor to his country, a disloyal friend and a murderer, but he seemed no worse than the men who followed him."

Miss Hollingworth went to Greece, after Rumania and Bulgaria, and Greece to her was not the relative comfort of Athens, but the hazards of the front itself. At the end of that campaign she escaped in an open sailing *caique* to Alexandria, and in the restless atmosphere of Cairo she finished this book—a book that is so unmistakably of our times.

BRITISH RESTAURANTS ON WHEELS SERVE COUNTRY VILLAGES

The advantages of the British Restaurants are now being made available to villages and hamlets too small to have their own communal feeding centres. This is being accomplished by the services of Ford Emergency Food Vans, which transport food previously prepared in Civic Kitchens and sell the meals at the roadside in many parts of rural England. The meals are carried in special containers which keep them piping hot for three to three and a half hours. In the past ten months nearly two million meals have been served from these vans in various parts of the country. This picture shows one of the Ford Emergency Food Vans on street-feeding service in the picturesque little Essex village of Stebbing. The meals are cooked at the British Restaurant in Dunmow, and the Ford Van makes a regular daily tour of the surrounding country, making halts at fixed points for the benefit of rural customers

Thirty or forty years ago in time and eons ago in feeling is Miss M. St. Clare Byrne's enchanting book of memories, COMMON OR GARDEN CHILD (Faber and Faber. 7s. 6d.), and, to introduce a grossly materialistic note, worth every penny of it.

The world of Miss Byrne's uncommon and delightful child—the book appears to be autobiography—is not the world which was conventionally happy and stable simply because it did not yet know the horrors of total war as we know them, but a world of personal discovery and personal adventure. Miss Byrne admits that her memory is erratic in the sense that she can never pin events down to a year or two, but it is more than photographically accurate when it is a question of reproducing feeling or sight or touch.

As a child it was her opinion that "men have the secret of things." Ladies, on the other hand, never referred to without that half-contemptuous capital, Ladies "I shall never learn to like. Ladies are *dull*." Whereas men "are always having ideas about what it would be fun to do; and you do it, and it is," Ladies can never leave well alone, and Ladies are apt to disapprove of one's favourite songs, such as this gem:

"Dearly beloved bretheren, the scriptures
moveth us into sun dry places,
To go and see the donkey races:
To go and confess our manifold sins,
And to go and see which donkey wins."

Children, one can see, had their trials even then, but children, then as now, were blessedly objective. "My affections," she writes, "—or what passed for them—led a singularly quiet and untroubled existence for their first ten years or so. No excessive demands were made upon them by my family. . . . I was, psychologically speaking, on velvet. . . . 'Love and Friendship' are the names of the two ways in which you like people. The first is for your family only, after you have got past the stage where it also includes Cook; and the second is for other people. There is also that very useful word 'like.'"

There is, fourthly, and fortunately for her readers, that excellent word "gratitude," and that was the word, and the feeling, that occurred to me as I closed a book of rarest perception.

Miss Vicki Baum's novel, GRAND OPERA (Geoffrey Bles. 8s. 6d.), is so precisely what expectant library subscribers are going to refer to for the next few months as "the new Vicki Baum," that no further words should be necessary to describe it.

Here is a born novelist who can no more help telling a story and creating characters—and I mean distinct, three-dimensional characters—than we can help going through the most mechanical chores of our everyday life. In fact, we quite possibly bring more effort to our routine existence than Miss Baum does to the creation of her highly-coloured world.

Her story practically reads itself; it skims along at a fine and entertaining pace, and keeps one as comfortably distracted as any film seen from the seven-and-sixpenny's. And the reader has a feeling that it is just as entertaining to the writer.

The Grand Opera, incidentally, is the famous and brilliant "Met." of New York, and the plot shows that admirable mastery of time and space which, in the course of a single evening's performance, can trace the stories of a dozen or more men and women, account for their joys and sorrows, which is a far more subtle business than merely listing them, and bring them, by a series of skilful eliminations and twists, to an ending just happy enough for the sentimental, just bitter enough for the vicarious realists.

Small wonder that in all this display of genuine virtuosity, the matter of the title was considered so cheap.

The Shaftesbury Homes and "Arethusa" Training Ship

Still another old *Arethusa* boy has been awarded the D.S.M. for the part he played at St. Nazaire. As he lay thinking in his cabin afterwards, he says his thoughts ran thus: "What sort of a position should I have been in to-day, were it not for the chance I received in the old *Are?*" Please support this worth-while work. Address: 164, Shaftesbury Avenue, London, W.C.2.

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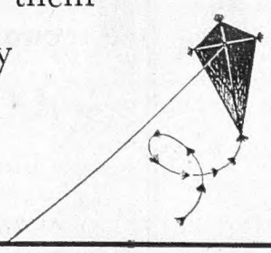
Fine flying weather...

Now at last the twine slips smooth and swift through small practised hands . . . Above, in the summer sky, the scarlet kite, abandoning its downward plunges, soars steadily upwards, borne by a wind of a strength unguessed-at here below.

But this is in a London Park — *what about the balloon barrage? What about the ban on kites?* And these children—*should they not be in some safer area now?* Ah, but they are citizens of the world after the War. Heirs of that freedom which victory alone can bring. Happy children — flying kites. And on the roads — happy motorists. Many of them driving new cars that the Standard Motor Company will build for the post-war world . . . !



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We ask you to be patient when you cannot get Horlicks. Reduced supplies are being distributed as evenly and fairly as possible.

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Under the supervision of Mr. BALLY, late of Boulestin, this hotel combines comfort and convenience with food that only an expert can produce.

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A few double rooms of character now available. *Phone Hurley 239*

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KIA-ORA

Lemon · Orange · Grapefruit Lime Juice Cordial 2/6

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including Purchase Tax

Keep an alert eye open for "Eclipse" Blades—now made only in the popular slotted pattern. Their clean and comfortable shaving is even more appreciated now that supplies are so limited.

Obtainable only from Retailers

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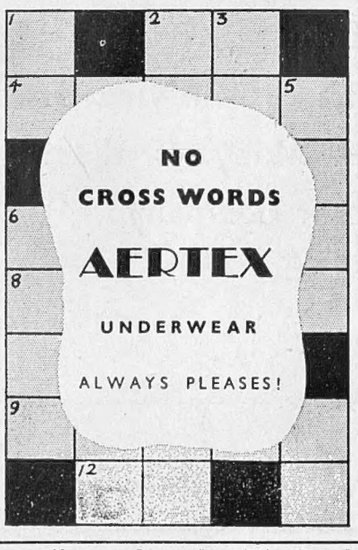

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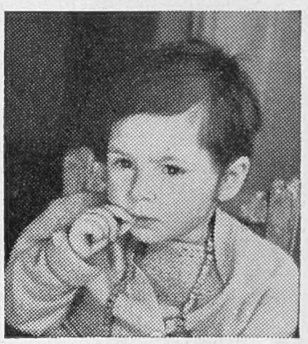

A LITTLE HELP WHEN IT IS NEEDED IS WORTH A DEAL OF PITY

OVER **6,000** CHILDREN TO FEED & CLOTHE EVERY DAY

Gifts gratefully received by the Secretary.

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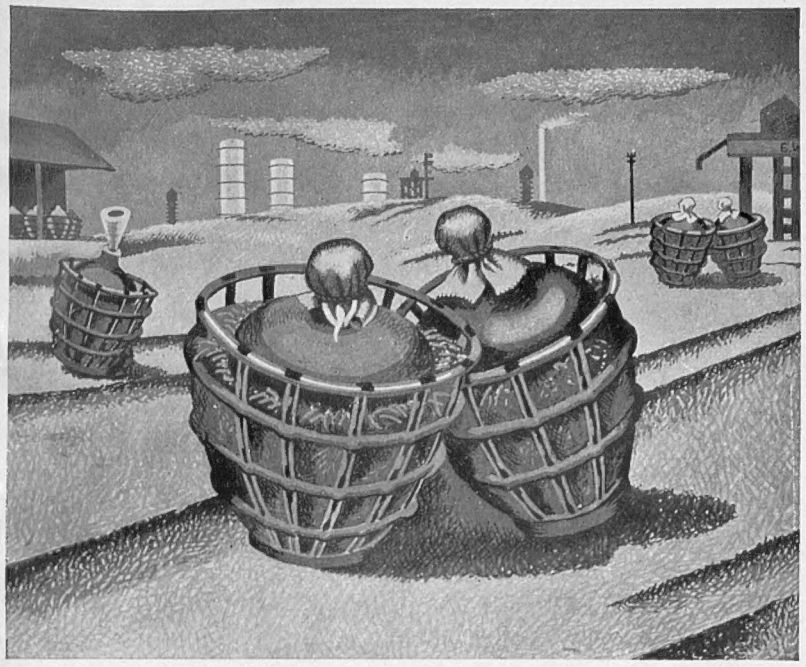

THE ACID TEST

NO mere colloquialism. Sulphuric acid is so widely used in Industry that it is commonly taken as an index to the state of trade. The acid is used as it is produced and therefore the chart of its consumption reflects the fluctuations of business quickly and closely. Acids, with their opposites, the alkalis, are both in volume and range of uses the most important direct contribution of the chemical industry to Production. There is scarcely a commodity, scarcely even a single article which can be made without either acids or alkalis entering at one or more stages of its manufacture. Sulphuric acid, otherwise known as oil of vitriol, is used in almost every conceivable industry. It is noteworthy that the modern method of producing the acid from iron pyrites, air and water was suggested in 1831 by Peregrine Phillips, a Bristol vinegar brewer. The other essential " heavy acids " are nitric and hydrochloric. Tens of thousands of tons of nitric acid, once known as " aqua fortis " or " strong water," are produced by the British chemical industry every year, and more in war even than in peace, for it forms the basis of nearly all explosives, as well as of the inorganic fertilizers which are today required in increasing quantities to grow more food from British soil. Hydrochloric acid, or spirit of salt, is a combination of hydrogen with chlorine and finds wide uses in the metal pickling, tanning and textile trades. The heavy acids are in one sense the manufactured products of the chemical industry. In the much wider sense they are essential raw materials without constant and adequate supplies of which the wheels of production would stop turning. It is reassuring that the British chemical industry is the largest manufacturer of heavy acids in the world.

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(We cannot publish the officer's name or ship, but the original letter can be produced among many other testimonials at our office.)

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The Vitabuoy in appearance is simply a smartly cut service great-coat in a two-fold Egyptian Navy Cotton Gabardine, triple proofed but interlined with a new material called " Tropal," which is four times warmer than wool and only one quarter the weight. The lining is distributed and anchored inside the coat on scientific principles, ensuring that the coat will support in water five times the weight of an average man for at least 72 hours. Sizes: Small, Medium and Large, **6 guineas,** plus Purchase Tax 12/6. Hood (if required) **17/6** extra, plus Purchase Tax 3/6, Post Free.

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